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Cardiovascular Risk in Military Eligible Women

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| 13. ABSTRACT (Maximum 200 Words) The overall Hypothesis is that the decline in physical activity habits and resultant increase in body fat reduces exercise capacity and muscle mass in military women. These lifestyle changes worsen cardiovascular risk factors. Therefore, continued involvement in resistance and endurance training exercise programs, which increases or preserves fat free mass, as well as enhances physical activity will prevent functional declines in military-eligible women. Although exercise is frequently recommended to enhance overall fitness, it is unclear as to whether endurance or resistance exercise is more effective in attenuating functional and cardiovascular declines in women. We systematically compared the effects of <u>endurance</u> and <u>resistance</u> exercise on physical activity, cardiovascular fitness and fat metabolism in military eligible women. To accomplish this objective, women (18-34 yrs.) were randomized to a six-month endurance training, resistance training or control group. We examined the following dependant variables: 1) <u>free-living physical activity</u> using doubly labeled water and indirect calorimetry; 2) <u>body composition</u> and <u>body fat distribution</u> using x-ray absorptiometry and computerized tomography; 3) <u>in-vivo fat oxidation</u> from ¹³ C palmitate; and 4) <u>insulin sensitivity</u> from hyperglycemic/euglycemic clamps. Our results provide new information on energetic and physiological effects of endurance and resistance on energy metabolism and fuel utilization in women. | | | |
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TABLE OF CONTENTS:

| | | |
|----------------------------------|-------|-----|
| (1) Front Cover | | 1 |
| (2) Standard Form (SF) 298 | | 2 |
| (3) Table of Contents | | 3 |
| (5) Introduction | ..... | 4 |
| (6) Body of the Report | ..... | 10 |
| Subject Selection | ..... | 10 |
| Experimental Design | ..... | 10 |
| Methods | ..... | 11 |
| Statistics | ..... | 19 |
| Results | ..... | 19 |
| Discussion | ..... | 19 |
| Recommendations | ..... | 20 |
| (7) Key Research Accomplishments | ..... | 20 |
| (8) Reportable Outcomes | ..... | 21 |
| (9) Conclusions | ..... | 21 |
| (10) References | ..... | 23 |
| (11) Appendices | ..... | 27 |
| Appendix I | ..... | 27 |
| Appendix II | ..... | 33 |
| Appendix III | ..... | 40 |
| Appendix IV | ..... | 69 |
| (12) Final Reports | ..... | 154 |

INTRODUCTION:

This proposal responds directly to the recommendations for research as outlined by the Institute of Medicine: **Recommendations for Research on the Health of Military Women**. Our proposal specifically addresses the request for research on the effectiveness of different types of physical training programs for women in the military.

Although physical activity is routinely prescribed for military-eligible women, a systematic examination of the effects of different modes of training on women's physiology and work performance has not been undertaken. Specifically, the decline in physical activity and loss of fat-free mass are significant predictors of decreased function and increased cardiovascular risk in military-eligible women. Thus, exercise interventions specifically designed to offset these deleterious changes in work performance, body composition and physical activity are important considerations. All military women initially experience the physical challenges of basic training and once through this experience, the new soldier experiences additional physical challenges that are directly influenced by other military-related activities including, deployment, natural aging, etc. Moreover, given the increased number of career military women retained in the services, strategies to achieve and maintain optimal fitness are of high priority.

Although exercise is recommended to military women, it is unclear as to which type of exercise is most effective in maintaining physical fitness and body composition in an effort to reduce cardiovascular risk and enhance physical function. This proposal will address several health benefits of endurance and resistance exercise in military eligible women in an effort to establish guidelines to maintain optimal cardiovascular and metabolic fitness in military-eligible women. **Results from this study will lay the scientific groundwork for the prescription of endurance and/or resistance exercise as the optimal mode of exercise to maintain physical fitness, work performance and reduce cardiovascular risk in military eligible women.**

The overall hypothesis is that the decline in physical activity habits and resultant increase in body fat reduces exercise capacity and muscle mass in military women. These lifestyle changes worsen metabolic and cardiovascular risk factors. Therefore, continued involvement in resistance and endurance exercise programs, which increases or preserves fat-free mass, will prevent functional declines in military-eligible women. Although exercise is frequently recommended to enhance overall fitness, it is unclear as to whether endurance or resistance exercise is more effective in attenuating functional and cardiovascular declines in women. We will systematically compare the effects of **endurance** and **resistance** exercise on physical activity, cardiovascular fitness, and fat metabolism in military eligible women. The results of this study will lay the groundwork for appropriate exercise prescriptions to reduce cardiovascular and metabolic risk and enhance physical function in military-eligible women.

1. AIMS AND HYPOTHESES:

AIM #1: To determine the effects of endurance exercise and resistance training on free-living physical activity and cardiovascular fitness in military-eligible women.

AIM #2: To determine the effects of endurance training and resistance training on body composition and body fat distribution.

AIM #3: To determine the effects of low intensity endurance vs. resistance training on in-vivo fat metabolism and insulin sensitivity.

2. BACKGROUND AND SIGNIFICANCE

Although increased physical activity is recommended to women, it is unknown as to the type of exercise that is most effective in attenuating functional declines and improving metabolic fitness. We will directly compare the effects of **endurance** and **resistance** training on: 1) free-living physical activity and cardiovascular fitness, 2) body composition and body fat distribution; fat metabolism, and insulin sensitivity in military-eligible women.

(2a) Exercise and Energy Expenditure.

One important reason to prescribe exercise is to increase daily energy expenditure and physical activity to maintain proper levels of body weight and composition. The influence of different types of exercise to achieve this goal has not been systematically examined in women.

Are endurance and resistance exercise effective interventions to increase resting and physical activity-related energy expenditure? A compelling goal of physical training programs is to increase physical activity and energy expenditure. It is presently unknown whether training programs accomplish this goal, as physical activity levels outside of the exercise program could not be accurately measured. This proposal will provide new information on the impact of endurance and resistance exercise programs on resting and physical-activity related energy expenditure.

Resting metabolic rate is the largest component of daily energy expenditure in humans (1). A low resting metabolic rate is a significant predictor for body weight gain (2), which may partially explain increases in body weight in women. We have also found the women have a lower resting metabolic rate per kilogram of fat-free mass (3). Collectively, these findings underscore the importance of exercise interventions that would increase resting energy expenditure in women in an effort to offset increases in body weight over time.

It is encouraging to note that both endurance and resistance training has been found to increase resting metabolic rate in women (1). However, its effects on free-living physical activity are of greater interest with respect to regulation of energy balance. Changes in physical activity constitute a large proportion of variation in daily energy expenditure.

Moreover, low levels of physical activity are a significant predictor of an increase in body weight over time (4).

We recently performed a study to examine the effects of endurance exercise on free-living energy expenditure outside of the exercise program. We found that women actually reduced their free-living physical activity during non-exercising time in response to endurance training (5). This physiological adaptation is counter-productive to the goals of the military, which strive to increase daily energy expenditure through physical exercise. It is possible that the intense level of the exercise program (85% of VO₂ max) may have contributed to this finding. This study raises new questions regarding the optimal exercise mode to enhance free-living physical activity in women. **This proposal will provide new information on the effects of endurance exercise on free-living physical activity by administration of doubly labeled water and the subsequent measurement of free-living physical activity.**

Much interest has recently focused on resistance training as an intervention to enhance muscular strength, restore physical function and reduce cardiovascular risk (6). The impact of resistance training, however, on physical and metabolic function has received less attention than endurance training, particularly in women. Resistance training is an effective stimulus to increase muscular strength and fat-free mass in untrained adults (6). The anabolic nature of resistance training may reverse declines in resting metabolic rate by increasing fat-free mass (7,8). We have no information, however, on the effects of resistance training on free-living physical activity in women. Resistance training may enhance free-living physical activity by several mechanisms: 1) an increase in protein synthesis (9); 2) an increase in sympathetic nervous system (8) and 3) increased levels of fat-free mass. In this study, we will provide new information on the effects of endurance exercise and resistance training as therapeutic interventions to increase free-living physical activity and maintain muscle mass in military-eligible women.

(2b) Exercise, Intra-abdominal Fat and Insulin Sensitivity

What are the effects of endurance and resistance exercise on body fat distribution and insulin sensitivity? We have included in the proposal an examination of the effects of exercise on the metabolic risk factors of insulin and fat metabolism. The rationale for their inclusion is twofold: 1) changes in physical activity and body composition in response to training positively influence these variables and 2) the insulin resistance syndrome is an independent risk factor for cardiovascular (10). It is only recently, however, that the role of exercise to reduce intra-abdominal fat has been examined, and to our knowledge, no information is available in women.

Schwartz et al (11) found that six-month endurance training induced a preferential loss of fat from the abdominal region. Despite the relatively small changes in body weight (<2 kg) and body composition, impressive (>20%) decrements were found in intra-abdominal fat. These changes were associated with improved lipid lipoprotein profiles. Tonino (12) demonstrated an increase in insulin sensitivity with the euglycemic clamp technique in men following an aerobic exercise-training program, which did not

substantially affect body composition. Houmard et al (13) exercise trained 13 middle-aged men, but found that a reduction in central body fat, as measured from the waist circumference, was not related to an improvement in insulin sensitivity. Alternatively, Kirwan et al (14) noted that regular exercise was effective in reducing hyperinsulinemia and improving insulin sensitivity and that these changes were related to the reduction in the waist circumference. Khort et al (15) showed that a higher waist circumference was related to a lower rate of glucose disposal in men. Unfortunately, no systematic investigation of the effects of exercise on insulin sensitivity and body fat distribution has been undertaken in women.

Most studies have focused on endurance training, whereas less attention has been directed towards the effects of resistance training on intra-abdominal body fat and insulin sensitivity. However, because isometric contractions produce insulin-like effects on glucose uptake in skeletal muscle (16) and muscle mass serves as the principal site of glucose disposal, resistance training could be an important intervention to enhance insulin action in women. Recent reports provide support for this hypothesis. Ross and Rissanen (17) found that the combination of energy restriction (1000 kcal/day) and either resistance or aerobic exercise induced significant reductions in intra-abdominal fat. This was a surprising finding given the fact that the direct energy cost of the endurance exercise program was substantially higher than the resistance-training program. This finding suggests that changes in the other components of total daily energy expenditure (resting metabolic rate or physical activity) may have occurred that significantly increased the total daily energy expenditure of the resistance-training program.

Several investigators examined changes in insulin sensitivity in response to resistance training. For example, insulin responses to an oral glucose challenge were found to be lower in younger individuals after resistance training (18), and in some cases glucose tolerance was improved similarly in endurance and resistance training (19). Miller et al (20) showed that 16 weeks of strength training improved the insulin response to glucose ingestion in young males, which they attributed to an increased muscle mass. Data from our laboratory showed that strength training increased non oxidative glucose metabolism by 45% in men (21). To our knowledge, no studies have directly compared the effects of endurance vs. resistance training on changes in intra-abdominal body fat and associated changes in glucose metabolism in women.

(2c) Exercise and Fat Metabolism.

What are the effects of endurance and resistance exercise on fat oxidation? We feel it is important to include a measure of fat oxidation in the present study to help explain the mechanisms related to changes in insulin sensitivity. It is reasonable to hypothesize that the loss of intra-abdominal body with exercise training programs will be associated with improvement in insulin sensitivity. This is based on the fact that adipose tissue in the visceral region is highly sensitive to lipolytic stimuli, particularly in those regions drained by the portal circulation (22). As a consequence, increased fat oxidation as a result of exercise would reduce the delivery of free-fatty acids to the liver, thereby reducing gluconeogenesis and stimulating hepatic insulin clearance. This would lead to lower

circulating concentrations of insulin and increased insulin sensitivity (23). However, the optimal exercise mode to maximize loss of intra-abdominal fat and improve insulin action has not been clearly established.

The majority of knowledge regarding the effects of exercise on fat oxidation has been primarily derived from endurance training studies and from measurements of circulating concentrations of substrates considered to be representative of lipolytic action (24,25). More recently, we have used in-vivo techniques to quantify fat metabolism in humans. We showed that endurance training increased levels of fat oxidation in healthy women (26). However, less information is available regarding the effects of resistance training on fat oxidation in younger women. Pratley et al (8) showed that 16 weeks of resistance training increased plasma levels of norepinephrine in men, but no changes were noted in fat oxidation. Melby et al (27) showed that resistance exercise elevated post exercise metabolic rate and fat oxidation 15-hr after exercise completion. They suggested that resistance exercise might be beneficial in weight control because of the direct energy cost of the activity, the residual elevation of post exercise VO_2 and the greater post-exercise fat oxidation. Work from our laboratory shows that fat-free mass is an important regulator of the rate of appearance of fatty acids into circulation and fat oxidation in women (28,29). Thus, resistance training may elevate the level of fat oxidation by increasing the metabolic demand for fatty acids by increasing skeletal muscle mass as well as the level of daily energy expenditure and physical activity. This study will provide new insight into the effects of endurance and resistance training on insulin sensitivity and fat oxidation in military-eligible women.

Collectively, this will be the first proposal to systematically examine the effects of endurance and resistance training on a comprehensive battery of cardiovascular and metabolic risk factors in military-eligible women.

3. WORK ACCOMPLISHED:

Intervention Studies

We examined the effects of exercise training on changes in total daily energy expenditure and physical activity. We subjected women to 8 weeks of intense endurance training in which resting metabolic rate, body composition and nor epinephrine kinetics were measured (30,31). We found that resting metabolic rate increased by 10% (150 kcal/d), without significant changes in body composition. These results suggest that endurance training increases resting energy needs in women. These results prompted further studies with doubly labeled water to examine the effects of exercise on daily physical activity, the true determinant of energy balance. **These studies document our ability to carry out and retain women in exercise intervention studies.**

We used doubly labeled water to assess the effects of exercise on free-living energy expenditure (5). We found that individuals became more inactive during their non-exercising time in response to a high intensity endurance exercise. We found that endurance training resulted in a 62% reduction in the energy expenditure of physical activity outside of

the exercise program (571 ± 383 to 340 ± 452 kcal/d). The results underscore the importance of using doubly labeled water to determine the effects of endurance or resistance exercise on daily energy expenditure in women. **This study documents our ability to use doubly labeled water methodology in exercise intervention studies and raises new questions regarding the type of exercise that is most efficient in increasing physical activity in military-eligible women.**

Fat Metabolism:

In a series of studies, the effects of endurance training on fat oxidation in women were assessed. Free fatty acid appearance rate and fat oxidation were determined from ^{14}C palmitate infusions and indirect calorimetry (26). In response to endurance training, free fatty acid appearance did not change, but fat oxidation increased (200 ± 12 vs. 244 ± 16 $\mu\text{mol}\cdot\text{min}^{-1}$; $P<0.01$). These results support the notion that endurance training increases fat oxidation in the basal state. Furthermore, individuals who increased total daily energy expenditure and physical activity also showed higher levels of fat oxidation ($r=0.55$; $P<0.05$). **These findings led us to propose to test the hypothesis that significant increases in total daily energy expenditure and physical activity (by endurance or resistance exercise) will enhance fat oxidation, promote loss of intra-abdominal fat and increase insulin sensitivity in military-eligible women.**

Resistance Training:

We examined relationships of resting metabolic rate to cardiovascular disease risk in middle-aged women characterized as resistance trained, aerobic trained or untrained (33). Resting metabolic rate, after normalization for differences in fat-free mass, was 7% higher in aerobic and resistance-trained women compared to untrained women. Both aerobic and resistance trained individuals were expending approximately 200 kcal/d more at rest when compared to untrained individuals. These results suggest that resistance and aerobic training can serve as suitable interventions to offset the decline in resting metabolic rate in military women. **We now propose a resistance training study in which daily energy expenditure can be measured to assess its relation to enhanced functional capacity and cardiovascular risk factors in military eligible women.**

The effects of resistance training, with and without weight loss, on endogenous insulin secretion and peripheral tissue glucose utilization was examined in postmenopausal women (34). Women trained three times per week for 16 weeks on resistance machines. Body composition was measured from dual-energy x-ray absorptiometry. Despite weight loss, fat-free mass was maintained in weight loss groups by concomitant resistance training. The endogenous insulin response decreased 24% with resistance training and 42% with resistance training and weight loss, with no change in glucose utilization. These results suggest that peripheral tissue sensitivity to endogenously secreted insulin improved to a greater extent with resistance training and weight loss rather than resistance training alone. However, resistance training increased insulin sensitivity in both groups. These results suggest that increased adiposity and glucose intolerance associated with the post-menopausal state could be prevented with resistance training and weight loss. **We now**

propose to study the mechanism of the increase in insulin sensitivity in military-eligible women by examining in-vivo fatty acid utilization and oxidation.

Significance of Proposed Work:

The adaptive responses of military-eligible women to endurance and resistance training have been an understudied area of research. The combined used of doubly labeled water methodology, multi compartment models of body composition, and substrate measures of insulin sensitivity and fat oxidation will provide new information on the effects of resistance and endurance exercise to cardiovascular and metabolic risk factors. Our preliminary data demonstrates our ability to successfully conduct exercise studies in women; perform sophisticated measured of energy expenditure and substrate metabolism. **Results from this study will lay the scientific groundwork for the prescription of resistance and endurance exercise to enhance cardiovascular and metabolic fitness in military eligible women.**

BODY OF THE REPORT:

SUBJECT SELECTION:

We successfully recruited 89 military eligible, non-pregnant women (18 to 35 yrs.) for this study. Of the 89 women recruited, 58 women completed the study with a dropout rate of 32%. The endurance group consists of 20 women; the resistance group; 20 women and the control group; 18 women. Volunteers were screened by telephone to ensure that they met the study inclusion criteria and are free of exclusionary criteria. Eligible subjects were scheduled for a screening visit at which time the study was explained in detail and a written informed consent was obtained. A fasting blood profile, a urinalysis, fasting and two hour postprandial glucose and a resting EKG was also obtained.

Criteria for subject inclusion was: premenopausal and age between 18 to 35 years, a body mass index between 18 and 25 kg/m². Exclusion criteria included a history or evidence on physical examination or testing of the following: 1) diabetes; 2) orthopedic limitations or history of pathologic fractures, 3) hypertension (>160/90 mmHg; 4) use of prescription or over the counter medications which could affect glucose metabolism (including insulin and oral hypoglycemic agents), 5) smoking.

EXPERIMENTAL DESIGN:

Volunteers were randomly assigned to a 6-month **endurance, resistance training or control group**. All subjects were weight stabilized and given dietary advice to consume a diet containing at least 250g of carbohydrate per day prior to testing. Diets were not changed throughout the program. All tests were performed during the follicular phase of the menstrual cycle. The testing sequence is described below:

Testing Sequence:

1. Recruiting: Telephone screen and advertising

2. Screening visit (1 day)

- (a) Physical exam and history
- (b) Graded exercise test
- (c) Oral glucose tolerance test
- (d) Blood chemistry and profile

3. Dietary Instruction, Body Weight Stabilization (2 weeks)

(a) Two weeks of dietary instruction for body weight stabilization and adequate carbohydrate intake. Perform test of VO₂ max test during this period to avoid interference of vigorous exercise with other metabolic tests.

4. Overnight Visit to the University of Vermont (1 day)

- (a) Administration of Baseline Doubly Labeled Water (afternoon of admission)
- (b) Computerized Tomography Scan (afternoon of admission)
- (c) Resting Metabolic Rate
- (d) Dual Energy x-ray Absorptiometry Scan
- (e) Fatty Acid Kinetics
- (f) Perform Insulin Clamp

5. Return visit (10 days later)

- (a) Urine collections of doubly labeled water

6. Random assignment to Endurance, Resistance or Control group

7. Tests During Exercise Programs

- (a) Re-assessment of strength to maintain exercise prescription

8. 6 month Post-testing Period:

(a) Testing sequence is identical as described in 3, 4 and 5 (testing conducted at least 48-72 hours after last exercise session)

METHODS:

The **METHODS** section is subdivided into the following categories:

- (1) Endurance Training, Resistance Training and Control Group**
- (2) Energy Expenditure**
- (3) Body Composition and Body Fat Distribution**
- (4) Insulin Sensitivity**
- (5) Fat Metabolism**

(1) INTERVENTIONS:

(a) Endurance Training Program

All endurance exercise sessions were preceded by a 10 min warm-up, which consisted of stretching of the major muscle groups and slow walking on a treadmill or indoor track. The women exercised three times per week using the Racquets Edge Health and Fitness Center. The training sessions consisted of an individually prescribed duration and intensity. To monitor adherence to prescribed training plan, volunteers wore a heart rate monitor (Polar Accurex, Polar Electronics Inc.) during each training session. The women were taught to monitor their heart rates during their exercise session. A warm-down was performed after the treadmill session and consisted of flexibility exercises. Data of individuals are considered in the statistical analysis that attended at least 80% of all exercise sessions.

The women were taught to monitor their heart rates. The first 4 weeks consisted of 25 minutes of slow jogging and/or brisk walking at 60% of HR_{max} . Thereafter, every 4-week period would be performed as follows: at the beginning of the 4-week period, time would increase by 5 minutes and intensity would increase by approximately 10% of max heart rate every week (from 60% at week 1 to 90% at week 4). At the beginning of the next 40- week period, time would increase by another 5 minutes and the intensity would be scaled back to 60% of HR_{max} . On week 16, women were walking or jogging for 40 minutes at 90% of HR_{max} . (Table 1)

Women followed a detailed program of specific workouts aimed at increasing exercise duration and intensity. The interval sessions consisted of 45 minutes of 80-90% HR_{max} training on Monday, 5-minute periods at 95% HR_{max} with 3-min rests on Wednesday, and 45 minutes at 80-90% of HR_{max} on Friday. (Table 2)

By the end of 6 months of endurance training, volunteers expended approximately 600-800 kcal per session, or an additional increase of 2400 to 3200 kcal per week generated by the direct energy cost of the exercise. The quantity of expenditure was substantial but realistic to perform when an adequate adaptation period is built into the study. Dr. Dvorak (a fellow in Dr. Poehlman's laboratory), hired personal trainers will supervise the exercise program.

| Duration of exercise | Week 1 | Week 2 | Week 3 | Week 4 |
|-----------------------------|----------------|----------------|----------------|----------------|
| 25' | 70% | 75% | 80% | 85% |
| | Week 5 | Week 6 | Week 7 | Week 8 |
| 30' | 75% | 80% | 85% | 90% |
| | Week 9 | Week 10 | Week 11 | Week 12 |
| 35' | 75% | 80% | 85% | 90% |
| | Week 13 | Week 14 | Week 15 | Week 16 |
| 40' | 75% | 80% | 85% | 90% |
| | Week 17 | Week 18 | Week 19 | Week 20 |
| 45' | 80% | 85% | 90% | |
| | Week 21 | Week 22 | Week 23 | |
| 50' | 80% | 85% | 90% | |
| | Week 24 | Week 25 | Week 26 | |
| 55' | 80% | 85% | 90% | |

Table 1. Endurance exercise training program: Base training phase (weeks 1-16).
 (% Represents the percentage of HR_{max} obtained during the peak oxygen consumption test)

| Week | Duration | Monday | Wednesday | Friday |
|-------------|-----------------|-------------------|-------------------|-------------------|
| 21 | 45' | 80% | 85% | 90% |
| 22 | 45' | Interval 1 | 80% | 85% |
| 23 | 50' | 80% | 80% | Interval 2 |
| 24 | 50' | 80% | 85% | 90% |
| 25 | 50' | Interval 3 | 75-80% | 80% |
| 26 | 55' | 85% | 85% | 90% |
| 27 | 55' | 90-95% | Interval 4 | 80% |
| 28 | 60' | 80% | 80-85% | 85% |

Interval 1: warm-up; 20' @ 90-95%, 15' slow jog, 10' @ 90-93%
Interval 2: warm-up; 3 * (10' @ 91-94%, 5' slow jog)
Interval 3: warm-up; 5 * (5' @ 92-95%, 4' slow jog)
Interval 4: warm-up; 8 * (3' @ 93-96%, 3' slow jog)

Table 2. Endurance exercise training program: Interval training (weeks 17-24)
 (% Represents the percentage of HR_{max} obtained during the peak oxygen consumption test)

(b) Resistance Training Program

The resistance-training program was designed to stimulate optimal gains in muscular size and strength over the 6-month training period. Women trained on three non-consecutive days during the week (e.g., Mon, Wed, Fri). Variation in training will enhance the quality of the exercise stimulus by improving the adherence to the training program and

reducing the potential boredom often associated with the use of a redundant resistance training protocol.

Women were individually instructed in the performance of each exercise and allowed to practice the exercise and strength testing protocol several times prior to initial testing and the start of the training program. Prior to strength testing, two resistance-training sessions were conducted so that women could become familiar with the equipment and proper exercise techniques.

Each training session included a warm-up of low intensity walking or cycling for 5 min, followed by a 10 min of static stretching of all the major muscle groups used in training. Each exercise session was individually monitored for optimal progression. The resistance program consisted of the following exercises: 1) Leg press, 2) Leg Extensions; 3) Hamstring Curls; 4) Chest Press; 5) Seated Rows; 6) Shoulder Press; 7) Bicep Curls; 8) Tricep Extensions; 9) Abdominals. These exercises provided a total body resistance-training program for all of the major muscle groups of the body. Cybex weight training equipment (located in the Racquets Edge Health and Fitness Center) was used.

The basic prescription was to perform three sets of ten repetitions for individual lift, with sixty second breaks between the sets. In addition, volunteers lifted the weight to failure during the last set, more specifically; they were able to perform at least six but no more than 12 repetitions. When they reached the level of performance so that they could perform 12 repetitions during the last set, the resistance was increased for the next training session. This ensured the necessary level of overload for each training session.

Because of the need for test specificity, 1 RM evaluations of certain exercises used in the training program provided the most direct evaluation of the training gains made over the 6-month period. The 1-RM is defined as the maximum amount of resistance that can be moved through the full range of motion of an exercise for no more than one repetition. To determine the 1 RM, each subject initially performed 3 to 5 repetitions with the lightest weight possible to be sure proper technique is used. The investigator then selected a weight and asked the subject to perform the lift. Following 3 to 4 minutes of rest, the next heaviest weight was selected and the attempt was repeated until the subject could not complete the full lift. In each case, the investigator attempted to determine the 1 RM with 6 to 7 trials to prevent localized muscle fatigue. Training was set at approximately 80% of 1 RM. The same number of trials, time between trials and order of exercises was used before and after training for the 1-RM test. Tests were administered prior to the start of the training program and twice per month for the first two months (because of the anticipated rapid increase in strength) and once per month thereafter. The following exercises were evaluated for 1 RM's: leg press, leg extension, chest press, military press, and seated rows.

(c) Control Group

The attention control group met as frequently in a group as the exercise intervention groups at the University of Vermont. They were strongly encouraged to maintain their current level of physical activity and not to engage in any form of endurance or resistance exercise. They received similar dietary instruction and social support as the exercise intervention groups. They participated in all testing and weight stabilization. Following the completion of the study, these women were provided personalized exercise prescriptions for endurance and resistance training programs.

(2) ENERGY EXPENDITURE

(a) Doubly labeled water (DLW)

To determine the effects of endurance and resistance training on **changes in daily energy expenditure and physical activity**, energy expenditure was measured during a 10-day period using DLW methodology (32). A baseline urine (10 ml) was collected and a mixed dose of DLW was orally administered the afternoon before the first test visit. The doses were approximately 0.24g of H₂¹⁸O and 0.22g of ²H₂O per kg of estimated total body water. The dose described has been selected to achieve initial and final enrichments that translate, by propagation of error analysis to a theoretical uncertainty in carbon dioxide production rates arising from analytical error of less than 5% (32).

Two urine samples were collected on the morning after dosing, and another two were collected on a return visit 10 days later. Samples are being analyzed in triplicate for H₂¹⁸O and ²H₂O enrichments by isotope ratio mass spectrometry at the Biomedical Mass Spectrometry Facility in the Department of Medicine at the University of Vermont using the CO₂ equilibration technique (36), and the off-line zinc reduction method (37). Total daily energy expenditure is calculated from doubly labeled water data using equation A6 of Schoeller et al (38). **This technique will provide new information on whether physical activity levels (outside of the exercise programs) change in response to the endurance and resistance exercise programs.**

(b) Resting Metabolic Rate (RMR)

RMR was assessed after an overnight fast in which volunteers stayed overnight. RMR was measured for each subject by indirect calorimetry for 60 min, using the ventilated hood technique (39), following an overnight, 12-hour fast. RMR was specifically measured on the first day of urine collections for the doubly labeled water. Respiratory gas analysis was performed using a Deltatrac metabolic cart (Sensormedics, Yorba Linda, CA). Energy expenditure was calculated from the equation of Weir (40). The intraclass correlation and coefficient of variation (CV) for RMR determined using test-retest in 17 volunteers is 0.90 and 4.3%, respectively. The respiratory quotient (RQ) was calculated from indirect calorimetry. Test-retest correlation coefficients for respiratory quotients are 0.91 in our laboratory. **This measurement provides information on whether resting energy requirements change in response to endurance and resistance exercise.**

(c) Physical Activity Energy Expenditure

Doubly labeled water in conjunction with indirect calorimetry was used to measure PAEE. The energy expenditure of physical activity was derived by subtracting RMR, and an estimate for the thermic effect of a meal from total daily energy expenditure, PAEE = TEE - (RMR + TEM) (32). A fixed constant of 10% of daily energy expenditure for the thermic response to feeding was assumed (41). We have chosen not to directly measure the thermic effect of a meal because: 1) its contribution to total daily energy expenditure is small (10% of total daily energy expenditure) (42) and 2) postprandial measurements are long (4 to 6 hr)

and of questionable reproducibility (43) and 3) the measurement of postprandial energy expenditure would significantly increase the time commitment for the women. **The change in the level of physical activity is a primary outcome variable because of its large contribution to daily energy expenditure and its relationship to changes in body composition.**

(d) Maximal Aerobic Power (VO₂ max)

VO₂ max was assessed by a progressive and continuous test to volitional exhaustion on a treadmill. After an initial 3-minute warm-up, the speed was held constant and the grade was increased by 2.5% every 2 minutes. VO₂ max was considered to have been achieved if two of the following criteria are met: 1) a plateau of VO₂ when the increase in oxygen consumption during the last minute of the VO₂ max test is <200 ml; 2) a respiratory exchange ratio greater than 1.1; or 3) a heart rate at or above the age-related predicted maximum (220 - age, yr). At least all volunteers met two of these criteria. Test-retest conditions (within 1 week) for VO₂ max for 20 volunteers have yielded an intraclass correlation of 0.94. If these criteria were not met, we requested that the volunteer perform another test of VO₂max. VO₂ max was assessed every two months to take into account the increases in maximal aerobic power so that exercise prescriptions can be re-evaluated to maintain the desired exercise intensity.

(e) Estimated energy intake

Self-recorded energy intake was measured for seven days during the doubly labeled water measurement period. Briefly, volunteers were provided with record sheets and dietary scales including procedures for reporting intake, estimation of portions, and describing food combinations. The energy content from food diaries will provide a more accurate estimate of food quotient necessary in the calculation from doubly labeled water.

(3) BODY COMPOSITION AND BODY FAT DISTRIBUTION

(a) Dual Energy x-ray Absorptiometry (DEXA)

DEXA uses the exponential attenuation due to absorption by body tissues of photons emitted at two energy levels (40 and 70 keV) to resolve body weight into bone mineral, and lean and fat soft tissue masses. The subject lays supine on a padded table. All metal objects are removed. The total dose for a scan is less than 1mSv. A total body scan takes about 30 minutes and provides estimates of the following: bone mineral densities (BMD, g/cm²), soft-tissue attenuations ratios (Rst-values), fat and lean tissue weights (g), and percent body fat for 9 body regions, as well as total body fat weight, %body fat, fat-free mass and total body mineral weight. The reproducibility for body fat is 1.7% in test-retest conditions in six females. **This technique provides information on whether fat mass, fat-free mass and bone density changes in response to endurance and resistance exercise.**

(b) Computerized Tomography (CT)

CT scans are performed on a Siemens Somatom DRH scanner (Erlangen, FRG) using the procedures of Sjostrom et al (44). Briefly, women are examined in the supine position with both arms stretched above their head and single 5 mm, 2 second scans are taken at the abdomen at the level of the umbilicus and the mid-thigh level halfway between the greater trochanter and superior aspect of the patella and greater trochanter. Based on our evaluation of mean attenuation and intersection of adipose muscle tissues of over 400 cross-sections of intra-abdominal adipose tissue, a range of -190 to -30 Hounsfield units (HU) is used to measure cross-sectional area of adipose tissue and 30-80 HU for muscle tissue. Intra-abdominal and subcutaneous fat areas (expressed in cm²) are measured using an automated computer program, which outlines fat with the HU range selected. The coefficient of variation for repeat cross-section analysis of scans among 40 women is less than 2% for adipose tissue. **The technique will provide information on whether the quantity of visceral fat changes in response to resistance and endurance exercise.**

(4) INSULIN SENSITIVITY

The hyperinsulinemic/euglycemic clamp was used to measure sensitivity to insulin (23). Women had an intravenous catheter placed in a large antecubital vein for infusion (20% dextrose) and another placed in a retrograde fashion into a dorsal vein with the hand kept in a warming box at 70°C to arterialize venous effluent. Blood samples are drawn from the dorsal hand vein for glucose and insulin determination (every 5 min). Plasma glucose levels are measured (Beckman Instruments, Fullerton, CA) and the rate of glucose infusion adjusted every 5 minutes to maintain the desired level of glycemia. Insulin concentrations were measured by radioimmunoassay in all samples from an individual (baseline, and post-intervention) in a single assay to minimize interassay variation.

The amount of glucose utilized is an index of insulin sensitivity. **This technique will provide new information on changes in insulin sensitivity in response to endurance and resistance exercise in military-eligible women.**

(4) FAT METABOLISM

(a) ¹³C-palmitate kinetics

Basal rates of lipolysis and whole body fat oxidation were assessed as previously described (26). Briefly, a non-primed constant infusion of [1-¹³C]palmitic acid was administered for 120 min in the post-absorptive state with simultaneous measurement of resting metabolic rate with indirect calorimetry. Samples for determination of the enrichment of the specific activity of palmitic acid will be taken prior to and at 90, 100, 110, and 120 min after the start of the infusion.

The calculations were made using the following equations:

i. The rate of appearance of palmitic acid (R_{aP}) with the following formula:

$$R_{aP} (\mu\text{mol/kg/min}) = IR / IE$$

Where, **IR** is the infusion rate of tracer ($\mu\text{mol/kg/min}$) and **IE** is the enrichment of substrate in plasma at isotopic equilibrium.

ii. The rate of appearance of free fatty acids (R_{aFFA}) with the following formula:

$$R_{aFFA} (\mu\text{mol/kg/min}) = R_{aP} (C_{FFA}/C_P)$$

Where, **C_{FFA}** is a concentration of free fatty acids in the blood measured by colorometric assay using kit from Biochemical Diagnostics (Brentwood, NY) and **C_P** is the concentration of plasma palmitate measured by gas chromatography-mass spectrometry.

iii. The rate of oxidative disposal (FFA_{ox}) of serum fatty acids was measured by indirect calorimetry. The rate of fat oxidation (FAT_{ox}) is obtained by dividing fat oxidation calculated with indirect calorimetry by 860 (molecular weight of a typical triglyceride), and multiplying it times three (three fatty acids per mole of triglyceride).

iv. The rate of non-oxidative disposal (FFA_{NOX}) of serum fatty acids (extra cellular recycling of fatty acids by the following formula:

$$FFA_{NOX} = R_{aFFA} - FFA_{OX}$$

The coefficient of variation for test-retest measurements is 13% and the intra-class correlation is 0.95 for ten older individuals tested two weeks apart. **This technique will provide information on changes in fatty acid appearance and fat oxidation in response to endurance and resistance exercise programs in military eligible women.**

(5) SAMPLE SIZE CALCULATIONS and DATA ANALYSIS

(1) Sample Size Calculations

We have calculated sample sizes based on hypothesized changes within the endurance and resistance treatment conditions. We present power calculations for hypothesized changes in two variables: 1) total daily energy expenditure and 2) insulin sensitivity. Our sample size calculations are for an alpha level of 0.05 with 80% power. Our recruiting and sample size goals were finally based on the changes anticipated with insulin sensitivity because of the larger sample size required.

We hypothesized that the total daily energy expenditure will be increased by 360 kcal/d for both endurance and resistance training with a standard deviation of 200 kcal/d in women. This increase takes into account the 10% increase in resting metabolic rate (160 kcal/d) (30) and the hypothesized increase of 200 kcal/d in free-living physical activity. We anticipate that endurance exercise will increase physical activity during non-exercising time because: 1) the loss of fat mass will reduce the burden of carrying extra weight and 2) daily

physical activities will be performed at a lower percentage of VO₂max. We anticipate that resistance training will increase fat-free mass by 2-3 kg. Data from our laboratory shows that for each 1 kg increase in fat-free mass, resting metabolic rate increases by approximately 50 kcal/d (42). This would translate into a 150-160 increase in resting metabolic rate per day. Again, given the increase in fat-free mass, we anticipate that women will be more physically active and expend approximately 200 kcal/d more per day in their non-exercising time. Thus, we hypothesize that total daily energy expenditure will be increased by an extra 360 kcal/d with a standard deviation of 200 kcal/d (32).

We have also performed power analyses on changes in insulin sensitivity. We estimated that setting the power at 0.80 and a significance level at 0.05, in order to detect a difference in glucose utilization 0.4 mg/kg fat free-mass/min. This preliminary data from our laboratory is based on 0.8 mg/kg fat-free mass change in glucose utilization in 10 endurance trained individuals who trained for 6 months and a 0.4 mg/kg fat-free mass change in 12 older individuals who lost 4 kg after 6 months and with a standard deviation of 1.1 and 1.3 mg, respectively. We will need 85 subjects or 28 women per group (resistance, endurance and control). With a 20% dropout rate, we will need to recruit 104 women over the four-year grant period. Because the sample size calculations for this variable yielded the greatest number of subjects to be recruited, we have based our recruiting and sample size calculations on the change in insulin sensitivity.

STATISTICAL ANALYSIS:

Analysis: A repeated measures analysis of variance will be used to detect changes with time within the treatment condition and among groups (endurance vs. resistance vs. control). The repeated measures factor will be the repeated tests during the exercise programs.

This analysis will provide information on whether total daily energy expenditure, resting metabolic rate, physical activity, fat metabolism and intra-abdominal body fat and insulin sensitivity change in response to and among treatment conditions. Changes in the dependent variables will be analyzed on an absolute as well as relative (%) basis.

RESULTS:

See attached paper in Appendix II and III.

DISCUSSION:

We conclude that our randomization procedure has been successful, as there were not any statistically significant differences among the groups at pre-testing in any of the physical characteristic variables. Moreover, the study is complete. The dropout rate is ~32% (31 volunteers), which is slightly higher than we have anticipated (20%). The major reason for dropouts has been non-compliance with the training protocol (16 volunteers). That is, the volunteers' participation in the training was below an acceptable level (80%), typically due to conflicts with their other commitments. Furthermore, 5

volunteers dropped out because of an injury (knee pains, ankle pains). This is to be expected, because only previously sedentary women are accepted for participation. Some of the other reasons included relocation (3 volunteers), refusal to return for post-testing (2 volunteers), health problems not related to training (3 volunteers), and pregnancy (2 volunteers). To decrease our dropout rate, we adopted a strategy of very detailed discussions with each prospective volunteer (by two different members of our team) during the initial contact over the phone as well as during the screening visit. On both occasions, we thoroughly describe and stress the time commitment necessary for their successful participation in the study. This approach has proven successful, during the last year and we have observed a substantially lower dropout rate.

The analysis of the pre- and post-intervention data supported the anticipated effect of our exercise training interventions. The increases in peak oxygen consumption as well as maximum strength and fat-free mass are in accordance with the results of similar exercise intervention studies.

RECOMMENDATIONS:

Recommendations at this time include that a continuous program involving resistance and/or endurance training shows significant improvements in glucose disposal in young women with normal body weight. This type of training also has a long-term effect on preventing the onset of type 2 diabetes, hypertension and cardiovascular disease. Each volunteer who has completed this study has seen significant results in their overall health. It has been recommended to them to continue a similar program on their own to further maintain a healthy lifestyle.

KEY RESEARCH ACCOMPLISHMENTS:

- Women with a BMI <26 but with a body fat percentage 30% are at a higher risk for impaired insulin sensitivity, which will potentially promote an early onset of type 2 diabetes, hypertension, and CVD.
- Young non-obese women with both high percentages of subcutaneous and visceral abdominal fat accumulation are at higher risk for impaired insulin sensitivity.
- Recent data has shown that obesity-related phenotypes are present in apparently healthy, young women with normal body weight.
- Major findings include that resistance and endurance training improve glucose disposal, which could prevent the onset of metabolic deterioration, type 2 diabetes, and obesity.
- The volume of physical activity performed in the present study may be more beneficial in preventing increases in total regional fat with advancing age, rather than promoting fat loss.
- Endurance and resistance training does not chronically alter total energy expenditure in free-living young women.

- Energy enhancing benefits of exercise training are primarily derived from the direct energy cost of exercise and not from a chronic elevation in daily energy expenditure in young, non-obese, women.

REPORTABLE OUTCOMES:

Through the course of working on this project, three papers have been submitted for publication. "Phenotypic Characteristics Associated With Insulin Resistance in Metabolically Obese but Normal Weight Young Women," written by, Roman V. Dvorak, Walter F DeNino, Philip A. Ades and Eric T. Poehlman is located in Appendix I. "Effects of Resistance Training and Endurance Training on Insulin Sensitivity in Non-obese, Young Women: A Controlled Randomized Trial," authors, Eic T. Poehlman, Roman V. Dvorak, Walter F. DeNino, Martin Brochu, and Philip A. Ades is located in Appendix II. " Effects of Endurance Training and Resistance Training on Total Daily Energy Expenditure in Young Women: A Controlled Randomized Trial," authors, Eric T. Poehlman, Walter F. DeNino, Travis Beckett, Kristen A. Kinaman, Isabelle J. Dionne, Roman V. Dvorak, Philip A. Ades is located in appendix III. In addition, a strong database of 58 volunteers has been generated from this study. This database will allow us to compare information in this study with current findings in our line of research. A current copy of the database presented in the Stat View program, is located in Appendix IV.

This grant has provided the University of Vermont with several employment and research opportunities. The Department of Medicine has developed a strong relationship with Racquet's Edge Health and Fitness Center, which has a direct effect on the community. Racquet's Edge is the leader among fitness clubs in this area and will be a strong link for the University of Vermont research department to the community. Employment opportunities from this project have been significant. Dr. Roman Dvorak worked on this project since the beginning. It has given him the opportunity to become independent with his own research and complete his post-doctoral degree here at the University of Vermont. Moreover, Travis Beckett and Kristen Kinaman have had the opportunity to personal train the volunteers as well as help to coordinate scheduling and assist in research for this project. Sarah Goodrich has also helped in training the volunteers at the Racquet's Edge furthering her career in research.

CONCLUSIONS:

We are very pleased with the progress of this study. We were able to recruit a substantial cohort of young women and the composition of all three groups follows the inclusion criteria as outlined above. Moreover, absence of significant difference among the groups at the pre-testing in age, weight, body mass index and peak oxygen consumption indicates that our randomization procedure works as anticipated. We have been receiving positive feedback from volunteers in the exercise training groups. Furthermore, the analysis of pre-versus post-exercise intervention data has shown that our exercise training

intervention induced the anticipated effects with respect to peak oxygen consumption, maximum strength, and fat-free mass.

In summary, both endurance and resistance training are effective interventions to enhance insulin sensitivity, despite minimal changes in body composition. On the other hand, increases in VO_2 max by endurance training or by strength training does not increase total daily energy expenditure or physical activity outside of the exercise programs. We would suggest that additional physical activity counseling may be necessary to augment free-living physical activity levels outside the exercise programs. Endurance and resistance training improve cardiovascular risk profiles in young women.

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APPENDIX I

Phenotypic Characteristics Associated With Insulin Resistance in Metabolically Obese but Normal-Weight Young Women

Roman V. Dvorak, Walter F. DeNino, Philip A. Ades, and Eric T. Poehlman

Metabolically obese, normal-weight (MONW) individuals are a hypothesized subgroup of the general population. These normal-weight individuals potentially display a cluster of obesity-related features, although this has not been systematically tested in young women. We hypothesized that MONW young women would display higher levels of total and visceral fat and lower levels of physical activity than normal women. In a cohort of 71 healthy nonobese women (21–35 years old), we identified MONW women based on cut points for insulin sensitivity (normal = glucose disposal $>8 \text{ mg} \cdot \text{min}^{-1} \cdot \text{kg}^{-1}$ of fat-free mass [FFM], $n = 58$; impaired = glucose disposal $<8 \text{ mg} \cdot \text{min}^{-1} \cdot \text{kg}^{-1}$ of FFM, $n = 13$). Thereafter, we measured body composition (dual energy X-ray absorptiometry) and body fat distribution (computed tomography), cardiorespiratory fitness ($\text{Vo}_{2\text{max}}$ on a treadmill), physical activity energy expenditure (doubly labeled water and indirect calorimetry), glucose tolerance (oral glucose tolerance test), serum lipid profile, and dietary intake. We found a higher body fat percentage (32 ± 6 vs. $27 \pm 6\%$, $P = 0.01$) and higher subcutaneous (213 ± 61 vs. $160 \pm 78 \text{ cm}^2$, $P = 0.03$) and visceral (44 ± 16 vs. $35 \pm 14 \text{ cm}^2$, $P < 0.05$) abdominal adiposity in the MONW group versus the normal group. The MONW group showed a lower physical activity energy expenditure (2.66 ± 0.92 vs. $4.39 \pm 1.50 \text{ MJ/day}$, $P = 0.01$), but no difference in cardiorespiratory fitness was noted between groups. In conclusion, despite a normal body weight, a subset of young, apparently healthy women displayed a cluster of risky phenotypic characteristics that, if left untreated, may eventually predispose them to type 2 diabetes and cardiovascular disease. *Diabetes* 48:2210–2214, 1999

The existence of a subgroup of individuals who have normal body weight but display a cluster of obesity-related phenotypic characteristics was first proposed in the 1980s (1). Since this discussion, an accumulating body of evidence suggests a high

prevalence of these individuals in the general population (2,3). These metabolically obese, normal-weight (MONW) individuals display early signs of insulin resistance, hyperinsulinemia, and dyslipidemia, despite having a normal weight based on traditional criteria (e.g., BMI, height/weight tables, etc.) (2). The presence of these metabolic and cardiovascular disease (CVD) risk factors may go undetected for years because young age, sex, and normal body weight mask the need for early detection and treatment. To our knowledge, however, the existence and prevalence of this syndrome in young women has not been systematically investigated. Moreover, the phenotypic characteristics that may be associated with the MONW syndrome in young women are unknown.

To this end, we identified MONW individuals (characterized by impaired insulin sensitivity) in a representative cohort of young nonobese women. Second, we compared the phenotypic characteristics implicated in the pathogenesis of insulin resistance between MONW and normal women. We hypothesized that MONW women would display higher levels of total and visceral adiposity and lower levels of cardiorespiratory fitness and physical activity than women with normal insulin sensitivity.

RESEARCH DESIGN AND METHODS

Patients. There were 71 young normal-weight women (67 of Caucasian, 2 of Asian, and 2 of Hispanic origin) who participated in the study. The inclusion criteria for participation were 1) age 18–35 years, 2) BMI ≤ 26 , 3) weight stable ($\pm 2 \text{ kg}$) over 6 months preceding the study, and 4) no regular participation in exercise for 6 months before the study. Exclusion criteria for participation were 1) smoking, 2) acute illness, 3) receiving any medication affecting energy expenditure (e.g., β -blockers), and 4) alcohol consumption $>15 \text{ g}$ of alcohol/day. The presence or absence of a family history of diabetes was obtained during the physical examination. Because participants in our study were young women (<35 years old), parental age may have limited the detection of type 2 diabetes. Thus, we also considered the presence of type 2 diabetes among grandparents and the siblings of parents as indicators of a positive family history. The use of oral contraceptives was also obtained from the medical history. This study was approved by the Committee for Human Research at the University of Vermont and each participant gave written informed consent before the beginning of the study.

Overview of protocol. Each participant was first invited to a screening visit during which an oral glucose tolerance test (OGTT), medical history, physical examination, maximum oxygen consumption test, and complete blood chemistry and profile were performed. Two weeks later, participants were invited for an overnight visit to the General Clinical Research Center (GCRC) at the University of Vermont. For 3 days before the overnight visit, participants were provided with standardized diets prepared by the metabolic kitchen at the GCRC, containing 55% carbohydrates, 25% fat, and 20% protein. During the afternoon of admission, we administered doubly labeled water and conducted body composition and body fat distribution measurements. The following morning, the hyperinsulinemic-euglycemic clamp was performed. Subjects returned to the GCRC 10 days later to provide the final two urine samples to conclude the doubly labeled water measurement.

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CVD, cardiovascular disease; FFM, fat-free mass; GCRC, General Clinical Research Center; MONW, metabolically obese, normal-weight; OGTT, oral glucose tolerance test; PAEE, physical activity energy expenditure; RMR, resting metabolic rate; TEE, total daily energy expenditure.

Measurements

Glucose tolerance. An OGTT was performed in the morning after an overnight fast. A Teflon catheter was placed into an antecubital vein, and baseline samples for the measurement of insulinemia and glycemia were drawn. Thereafter, a standard glucose load (1.33 g/kg of body mass) was given orally (Ensure Plus; Ross Laboratories, Columbus, OH). Samples for repeated measurement of glycemia and insulinemia were then taken 120 min after baseline.

Body composition. We measured body composition by dual energy X-ray absorptiometry (Lunar DPX-L, Madison, WI), as previously described (4). The subjects were instructed to lay supine on a padded table with all metal objects removed. A total body scan takes ~30 min. This method uses a three-compartment model of body composition and provides an estimate of fat mass, fat-free mass (FFM), and bone mineral density. We analyzed all scans by the Lunar DPX-L extended analysis software, version 1.3. The test-retest reproducibility for body fat is 1.7% (six females) in our laboratory.

Body fat distribution. We measured body fat distribution by computed tomography (CT) using a General Electric High Speed Advantage CT Scanner (GE Medical Systems, Milwaukee, WI), as previously suggested by Sjostrom et al. (5) and reported by our laboratory (6). Visceral and subcutaneous abdominal fat accumulation was assessed at the level of L₄-L₅ intervertebral space. Scan position for the abdominal level was established using a scout view, positioning the scanner within the desired intervertebral space. The scans were 5 mm in thickness and performed at 120 kV and 220 mA. Visceral and subcutaneous adiposity was quantified by delineating the visceral cavity using the trace function and excluding the retroperitoneal area. The boundary was established at the innermost aspects of the abdominal and oblique muscle walls. Subcutaneous adipose tissue was selected as the area remaining between the visceral boundary and the skin. Retroperitoneal fat was excluded from both the subcutaneous and visceral adipose tissue areas. Adipose tissue was selected by the software at an attenuation range of -190 to -30 Hounsfield units. The visceral cavity was assessed using the "mask" function and then the subcutaneous area using the "contour" feature. The same individual analyzed all scans, and the interclass correlation for repeated analysis of 10 scans was 0.99 in 10 women.

Cardiorespiratory fitness. Maximum aerobic capacity ($V_{O_{2\max}}$) was determined from an incremental exercise test on a treadmill to exhaustion, as previously described (7). After an initial 3-min warm-up, the speed was set so that the heart rate would not exceed 70% of the age-predicted maximum heart rate [220 - age (years)]. Thereafter, the speed was held constant, and the grade was increased by 2.5% every 2 min. The criteria for achieving a $V_{O_{2\max}}$ were 1) a respiratory exchange ratio >1.0, 2) a heart rate at or above the age-predicted maximum, and 3) no further increase in oxygen consumption with an increasing workload. At least two of these criteria were reached by all volunteers. Test-retest conditions for nine individuals (on two occasions tested 1 week apart) yielded an intraclass correlation of 0.94 and a coefficient of variation of 3.8% in our laboratory.

Physical activity energy expenditure. We used doubly labeled water in combination with indirect calorimetry to measure free-living physical activity energy expenditure (PAEE). Total daily energy expenditure (TEE) was determined over a 10-day period. Each subject was dosed with a 1 g/kg body mass of ^{2}H - ^{18}O using the method of Schoeller and van Santen (8), as previously described (9). Briefly, a baseline urine sample was collected before dosing. The following morning, two additional urine samples were collected, and two more samples were collected 10 days later. Urine samples were stored frozen in vacutainers at -20°C until analyzed for ^{2}H and ^{18}O enrichments by isotope ratio mass spectrometry. ^{18}O isotopic enrichment was determined from the carbon dioxide (CO₂) equilibration technique, and ^{2}H enrichment was determined by the zinc catalyst method (10). Daily rate of CO₂ production (mol/day) was calculated using the equation of Speakman et al. (11): $r\text{CO}_2 = N/2.196 \times (^{18}\text{O}/\text{O} - ^{2}\text{H}/\text{H})$, where N is the total body water pool, ^{18}O and ^{2}H are the elimination rates of ^{18}O and ^{2}H tracers from the body, and ^{18}O and ^{2}H are the dilution spaces for ^{18}O and ^{2}H tracers, as recommended by Racette et al. (12). Assuming a respiratory quotient of 0.85 for the food consumed (13), total CO₂ production was converted to TEE (kJ/day) using the formula by Weir (14).

Resting metabolic rate (RMR) was determined from 45 min of indirect calorimetry using the ventilated hood technique, as previously described (15). Respiratory gas analysis was performed using a Deltatrac metabolic cart (SensorMedics, Yorba Linda, CA). RMR (kJ/day) was calculated from the equation by Weir (14). Assuming a thermic effect of feeding of 10% (16), total PAEE was then calculated from the equation: PAEE = [(TEE × 0.90) - RMR]. That is, PAEE represents the energy expenditure accumulated above basal levels, which include volitional and nonvolitional activities. We have previously reported an intraclass correlation of 0.90 and a coefficient of variation of 4.3% for the measurement of RMR in 17 older volunteers from two different occasions tested 1 week apart.

Insulin sensitivity. We measured insulin sensitivity by the hyperinsulinemic-euglycemic clamp technique, as proposed by DeFronzo et al. (17). Briefly, a Teflon catheter was inserted into the antecubital vein for the infusions of insulin

and dextrose. Another Teflon catheter was retrogradely placed into the dorsal vein of the contralateral hand and used for the blood draws during the clamp procedure. This hand was placed in a "hot box" and warmed to 70°C for arterialization of blood. At time 0 min, a continuous infusion of insulin was started at a constant rate of 240 pmol · m⁻² · min⁻¹. At the same time, a variable infusion of 20% dextrose was started to maintain fasting glycemia ±5%. Blood samples for glucose measurement were taken every 5 minutes for insulin measurements at -30, -10, 0, 30, 60, 70, 90, 105, and 120 min of the clamp. The insulin levels attained during the last 30 min of the clamp (minute 90–120) were 75 ± 23 μU/ml (mean ± SD). Insulin-stimulated glucose disposal rate (M value) was calculated as the average glucose infusion rate (mg/min) during the last 30 min of the 120-min clamp, adjusted for the total distribution volume of glucose (250 ml/kg). Hepatic glucose production has previously been shown to be fully suppressed, with the insulin dose used in our study to induce hyperinsulinemia (18).

Dietary intake. Dietary intake was measured for 3 days (one weekend and two weekdays), as previously described (19). Participants were instructed by a registered dietitian and encouraged to maintain their usual diet. Moreover, they were provided with dietary scales and measuring cups and spoons to further increase precision of obtained data. Diets were analyzed using the Nutritionist III software version 4.0 (N-Squared Computing, Salem, OR).

Blood pressure. Blood pressure was determined during the screening visit at the GCRC using a Dinamap automatic cuff machine (Critikon, Tampa, FL), as previously described (20). Subjects rested in the sitting position for 10 min and then the measurement was taken from their right arm. Appropriate cuff size was selected based on arm circumference.

Biochemical analyses. Plasma glucose concentrations were measured using the glucose oxidase method with an automated glucose analyzer (YSI Instruments, Yellow Springs, OH). Serum insulin was measured by a double antibody radioimmunoassay (Diagnostics Products, Los Angeles, CA). Plasma cholesterol, triglyceride, and HDL cholesterol concentrations were determined from standard enzymatic techniques at the Centers for Disease Control accredited laboratory of the Fletcher Allen Medical Center. Interassay coefficient of variation for the measurement of total and HDL cholesterol was 3.35 and 1.15%, respectively. LDL cholesterol was determined from the equation by Friedewald et al. (21).

Statistical analysis. To identify women classified as having impaired insulin sensitivity, we used a glucose disposal cut-point value of 8.0 mg · min⁻¹ · kg⁻¹ of FFM, based on previous data (22). Women with a glucose disposal rate greater than the cut-point value were classified as having normal insulin sensitivity and those women with values below the cut point as having impaired insulin sensitivity. The rationale for using glucose disposal as the criterion method to categorize individuals as normal or MONW is based on the notion that resistance to insulin-stimulated glucose uptake is suggested as a common pathogenic mechanism for type 2 diabetes, hypertension, and, ultimately, CVD (23,24). Differences in dependent variables between the groups (MONW vs. normal) were examined using an independent *t* test. Differences between groups in cardiorespiratory fitness were examined using analysis of covariance, with body weight as a covariate (7). Given the unequal sample size between groups, we examined the equality of variances in each variable using Levene's test. When the variances were unequal (HDL cholesterol and glucose disposal adjusted per kilogram of FFM), a *P* value based on Satterthwaite's (25) approximation for the degrees of freedom was used. A χ^2 test was used to compare the differences between the groups for the family history of diabetes and use of oral contraceptives. All values are reported as means ± SD. Significance was accepted at *P* < 0.05. Data were analyzed using the SPSS statistical software (Version 7.5.1, SPSS, Chicago).

RESULTS

Table 1 shows glucose disposal values and anthropometric variables for the normal and MONW groups. By design, the MONW women showed a lower absolute and adjusted (per kilogram of FFM) insulin-stimulated glucose disposal rate. The groups were similar with respect to age, BMI, body mass, FFM, and appendicular fat mass. Women classified as MONW, however, showed a greater total fat mass (*P* < 0.05), body fat percentage (*P* = 0.01), truncal fat (*P* = 0.02), and subcutaneous (*P* < 0.05) and visceral (*P* < 0.05) abdominal adiposity than women with normal insulin sensitivity.

We found no differences between groups in cardiorespiratory fitness on an absolute or adjusted basis (Table 2). On the other hand, we found a lower PAEE in the MONW women compared with normal women (*P* < 0.001, Table 2). No differences between groups were found for systolic or diastolic

TABLE 1
Comparison of glucose disposal and anthropometric variables between women with impaired (MONW) and normal insulin sensitivity

| Variable value | MONW | Normal | P |
|---|------------|------------|-------|
| n | 13 | 58 | — |
| Age (years) | 29 ± 3 | 28 ± 4 | 0.97 |
| Glucose disposal (mg/min) | 250 ± 65 | 444 ± 112 | 0.001 |
| Glucose disposal (mg · FFM ⁻¹ · min ⁻¹) | 6.5 ± 1.7 | 11.0 ± 2.2 | 0.001 |
| BMI (kg/m ²) | 22.5 ± 2.0 | 21.5 ± 2.0 | 0.08 |
| Body mass (kg) | 60.1 ± 8.9 | 58.4 ± 6.9 | 0.42 |
| FFM (kg) | 38.9 ± 5.1 | 40.3 ± 4.0 | 0.28 |
| Fat mass (kg) | 18.4 ± 5.2 | 15.3 ± 4.4 | 0.03 |
| Body fat (%) | 31.8 ± 5.9 | 27.4 ± 5.5 | 0.01 |
| Appendicular fat (kg) | 8.9 ± 2.6 | 8.0 ± 2.3 | 0.23 |
| Truncal fat (kg) | 8.2 ± 2.6 | 6.5 ± 2.4 | 0.02 |
| L ₄ -L ₅ subcutaneous fat area (cm ²) | 213 ± 61 | 160 ± 78 | 0.03 |
| L ₄ -L ₅ visceral fat area (cm ²) | 44 ± 16 | 35 ± 14 | 0.046 |

Data are means ± SD. To identify women classified as having impaired insulin sensitivity, we used a glucose disposal cut-point value of 8.0 mg · min⁻¹ · kg⁻¹ of FFM, based on the data presented by Beck-Nielsen and Groop (22).

blood pressure, family history of diabetes, or the use of oral contraceptives (Table 2). Furthermore, we found no differences in total energy intake (8.28 vs. 8.32 MJ/day); percent intake of carbohydrate (53 vs. 56%), fat (33 vs. 30%), and protein (13 vs. 14%); and percent fat intake from saturated fat (36 vs. 34%) between the MONW and normal group, respectively.

In Table 3, we present the results of the OGTT and serum lipid profile. The MONW group showed a higher fasting ($P = 0.03$) and 2-h postload insulin ($P < 0.001$), 2-h postload glucose ($P < 0.01$), and total serum cholesterol ($P < 0.01$) than the normal group. We found no differences between groups in fasting serum glucose, HDL cholesterol, total-to-HDL cholesterol ratio, LDL cholesterol, or fasting triglycerides.

DISCUSSION

To our knowledge, this is the first study to comprehensively examine the phenotypic characteristics associated with the MONW syndrome in young women. Based on our approach,

we found that 18% of our population was classified as having impaired insulin sensitivity, despite having normal body weight and BMI. Furthermore, young MONW women with impaired insulin sensitivity showed a cluster of risky phenotypic characteristics, including low PAEE and increased total and visceral adiposity.

The incidence of obesity and type 2 diabetes is increasing among women (26), which places them at high risk for the development of insulin resistance and associated comorbidities (27). Given that the deleterious consequences of compensatory hyperinsulinemia (i.e., microangiopathy, hypertension, and CVD) are present at the time of diagnosis of overt type 2 diabetes (28), a clear medical need exists to identify markers for early detection of these individuals before the onset of an established disease process.

We classified individuals above and below a glucose disposal cut point of 8 ml · min⁻¹ · kg⁻¹ of FFM. The use of glucose disposal to subdivide young women into normal and MONW groups is based on the notion that a decrease in insulin sensitivity may be a common pathogenic mechanism in the development of type 2 diabetes, hypertension, and CVD (23,24). Although this cut point may be considered somewhat arbitrary, women who were classified as having impaired insulin sensitivity (based on hyperinsulinemic-euglycemic clamp) also displayed an altered response to oral glucose load (Table 2). Furthermore, the chosen cut point was based on previous multicenter data (22) that examined insulin sensitivity data from a large sample of individuals. We were somewhat surprised that 18% ($n = 13$) was categorized as having impaired insulin sensitivity. This finding supports the hypothesis by Ruderman et al. (2) regarding the relatively high prevalence of individuals with impaired insulin sensitivity in apparently healthy normal-weight individuals. This finding prompted us to examine several obesity-related phenotypic characteristics that have been implicated in the development of impaired insulin sensitivity.

In the present study, we found that women with impaired insulin sensitivity were characterized by a higher body fat percentage and fat mass than women with normal insulin sensitivity, despite no difference in body mass or BMI between groups. This suggests that even small increases in body fatness (2–3 kg) within a normal range of BMI negatively affect insulin sensitivity. Indeed, in our cohort, the incidence of impaired insulin sensitivity reached almost 40% among women with a body fat percentage >30%. Therefore,

TABLE 2
Comparison of cardiorespiratory fitness, PAEE, blood pressure, oral contraceptives, and incidence of family history of diabetes between women with impaired (MONW) and normal insulin sensitivity

| Variable | MONW | Normal | P value |
|---|-----------------|------------------|---------|
| n | 13 | 58 | — |
| VO _{2max} (ml/min) | 2,228 ± 509 | 2,297 ± 426 | 0.61 |
| Adjusted VO _{2max} (ml/min)* | 2,197 ± 396 | 2,304 ± 395 | 0.38 |
| PAEE (MJ/day) (n) | 2.66 ± 0.92 (9) | 4.39 ± 1.50 (41) | 0.01 |
| Systolic blood pressure (mmHg) | 118 ± 12 | 118 ± 14 | 0.99 |
| Diastolic blood pressure (mmHg) | 69 ± 8 | 68 ± 10 | 0.73 |
| Family history of diabetes (%) (yes/no) | 31 (4/9) | 32 (14/44) | 0.53 |
| Use of oral contraceptives (%) (yes/no) | 60 (8/5) | 47 (27/31) | 0.33 |

Data are means ± SD or %. *Adjusted for kilogram of body weight, as previously described (7).

TABLE 3

Comparison of OGTT and blood lipid values between women with impaired (MONW) and normal insulin sensitivity

| Variable | MONW | Normal | P value |
|-------------------------------|-----------|-----------|---------|
| n | 13 | 58 | — |
| Fasting glucose (mmol/l) | 4.4 ± 0.4 | 4.4 ± 0.3 | 0.80 |
| 2-h postload glucose (mmol/l) | 5.7 ± 1.1 | 4.6 ± 1.1 | 0.003 |
| Fasting insulin (pmol/l) | 60 ± 20 | 49 ± 15 | 0.03 |
| 2-h postload insulin (pmol/l) | 481 ± 259 | 281 ± 186 | 0.001 |
| Total cholesterol (mmol/l) | 5.3 ± 0.9 | 4.5 ± 0.7 | 0.003 |
| HDL cholesterol (mmol/l) | 1.7 ± 0.5 | 1.5 ± 0.3 | 0.15 |
| Total-to-HDL cholesterol | 3.3 ± 0.9 | 3.3 ± 0.8 | 0.91 |
| LDL cholesterol (mmol/l) | 3.1 ± 0.9 | 2.7 ± 0.8 | 0.14 |
| Triglycerides (mmol/l) | 2.4 ± 0.7 | 2.4 ± 1.0 | 0.93 |

Data are means ± SD.

we suggest that young women with a BMI <26 but with a body fat percentage >30% are probably at a higher risk for impaired insulin sensitivity and a potentially early onset of type 2 diabetes, hypertension, and CVD. Our findings thus support the notion that BMI is a poor marker to identify women at risk for the development of insulin resistance and associated comorbidities.

The question as to whether body fat topography is "pathogenic" with respect to insulin sensitivity and type 2 diabetes is controversial (29). For example, some investigators found that abdominal subcutaneous adiposity is a stronger predictor of insulin sensitivity than visceral adiposity in middle-aged men and women (30) and in pre-menopausal women (31). On the other hand, others (32,33) reported that visceral adiposity is the stronger determinant of insulin sensitivity in obese women. In the present investigation, young women with impaired insulin sensitivity showed significantly higher subcutaneous as well as visceral abdominal fat accumulation than women with normal insulin sensitivity. Despite the fact that the levels of visceral fat accumulation in the MONW group were well below the suggested critical threshold of 130 cm² (34), it is possible that even relatively low levels of visceral adiposity in the presence of higher levels of total body fatness have a deleterious impact on insulin sensitivity. Nonetheless, our findings suggest that in young nonobese women, both subcutaneous and visceral abdominal fat accumulation may be associated with impaired insulin sensitivity.

Physical inactivity (35) and low cardiorespiratory fitness (36) have been implicated as important risk factors in the pathogenesis of type 2 diabetes. We found no differences in cardiorespiratory fitness between groups. This may be because only sedentary women were recruited for the study and thus limited our ability to find differences between the groups. On the other hand, we noted a significantly lower PAEE in the MONW group. To our knowledge, this is the first study that used a direct measurement of PAEE by the doubly labeled water methodology in the examination of risk factors for insulin resistance and CVD in free-living individuals. Previous investigations have reported an inverse relationship between physical activity and incidence of type 2 diabetes (37); however, physical activity levels were only estimated from a self-reported questionnaire, which has been shown to be inaccurate (38). These results suggest that

PAEE, and not cardiorespiratory fitness, may be a more important predictor of impaired insulin sensitivity. We would suggest that PAEE probably influences insulin sensitivity and other CVD risk factors primarily through its effects on energy balance and body composition (39). That is, lower levels of PAEE found in the MONW group may favor a positive energy balance, especially because total daily energy intake was similar between the groups. Thus, low levels of PAEE may favor a greater increase in total and central adiposity in susceptible individuals (40).

Despite differences in other phenotypic characteristics between the MONW and normal groups, no differences were found in the total-to-HDL cholesterol ratio, fasting triglycerides, and LDL cholesterol. The cardioprotective effects of estrogen on plasma lipids has been well documented (41). Thus, it is possible that the presence of estrogen in these young women may exert a stronger influence on plasma lipids than differences in physical activity and adiposity.

Our results have clinical implications for the detection and treatment of susceptible individuals for type 2 diabetes and CVD. The phenotypic features associated with impaired insulin sensitivity (increased body adiposity and low levels of physical activity) are generally responsive to lifestyle modifications such as dietary restriction and aerobic exercise training (39,42). Therefore, identification and early treatment of these individuals, particularly at younger ages before metabolic diseases become overt and established, would have a substantial public health value. It needs to be emphasized, however, that our cross-sectional study cannot establish a causative relationship. Further studies using exercise, dietary, or pharmacological interventions are needed to evaluate whether the metabolic profile of MONW individuals can be normalized.

In conclusion, we found that despite a normal body weight, a subset of young, apparently healthy women displayed a cluster of risky phenotypic characteristics that may eventually predispose them to type 2 diabetes and CVD.

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APPENDIX II

Effects of Resistance Training and Endurance Training on Insulin Sensitivity in Nonobese, Young Women: A Controlled Randomized Trial*

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ABSTRACT

We examined the effects of a 6-month randomized program of endurance training ($n = 14$), resistance training ($n = 17$), or control conditions ($n = 20$) on insulin sensitivity in nonobese, younger women (18–35 yr). To examine the possible mechanism(s) related to alterations in insulin sensitivity, we measured body composition, regional adiposity, and skeletal muscle characteristics with computed tomography. We observed no changes in total body fat, sc abdominal adipose tissue, or visceral adipose tissue with endurance or resistance training. Insulin sensitivity, however, increased with endurance training (pre, 421 ± 107 ; post, 490 ± 133 mg/min; $P < 0.05$) and resistance training (pre, 382 ± 87 ; post, 417 ± 89 mg/min; $P = 0.06$). When the glucose disposal rate was expressed per kg fat-free mass (FFM), the improved insulin sensitivity persisted in endurance-trained (pre, 10.5 ± 2.7 ; post, 12.1 ± 3.3 mg/min·kg FFM; $P < 0.05$), but not in resistance-trained (pre, 9.7 ± 1.9 ; post, 10.2 ± 1.8 mg/min·kg FFM;

$P = \text{NS}$) women. Muscle attenuation ratios increased ($P < 0.05$) in both endurance- and resistance-trained individuals, but this was not related to changes in insulin sensitivity. Moreover, the change in insulin sensitivity was not related to the increased maximum aerobic capacity in endurance-trained women ($r = 0.24$; $P = \text{NS}$). We suggest that both endurance and resistance training improve glucose disposal, although by different mechanisms, in young women. An increase in the amount of FFM from resistance training contributes to increased glucose disposal probably from a mass effect, without altering the intrinsic capacity of the muscle to respond to insulin. On the other hand, endurance training enhances glucose disposal independent of changes in FFM or maximum aerobic capacity, suggestive of an intrinsic change in the muscle to metabolize glucose. We conclude that enhanced glucose uptake after physical training in young women occurs with and without changes in FFM and body composition. (*J Clin Endocrinol Metab* 85: 2463–2468, 2000)

AEROBIC EXERCISE training can improve insulin sensitivity (1–4), whereas the role of resistance training to improve the metabolic profile has received less attention. As isometric contractions produce insulin-like effects on glucose uptake in isolated skeletal muscle (5), and skeletal muscle is the primary site of glucose disposal at euglycemia, it is reasonable to hypothesize that increasing skeletal muscle mass may be an effective intervention to improve insulin sensitivity. There is little information on the effects of resistance training on glucose disposal using clamp methodology in a controlled, randomized design. Moreover, investigators have tended to rely on nonrandomized studies and the use of oral glucose tolerance tests to estimate insulin sensitivity (6–9).

To our knowledge, no study has directly compared the effects of endurance vs. resistance training on insulin sensitivity using clamp methodology in women. This area of investigation is important because recent data show that despite having a normal body weight, a subset of young

women show a cluster of metabolic abnormalities that would predispose them to type 2 diabetes and related comorbidities if left untreated (10). The incidence of obesity and type 2 diabetes is increasing among women (11), which places them at high risk for the development of insulin resistance and associated comorbidities (12, 13). Clearly, preventive public health measures to prevent deterioration of the metabolic profile of younger women are needed before disease processes become established.

To address this topic, we directly compared the effects of resistance training and aerobic training on insulin sensitivity using a controlled randomized trial. Moreover, to examine potential mechanism(s) regulating training effects on insulin sensitivity, we measured changes in body composition, visceral fat, and skeletal muscle density using radiological imaging techniques, as changes in these variables are thought to be related to altered glucose disposal (14–18). We hypothesized that endurance training would increase insulin sensitivity to a greater degree than resistance training in young women, and these changes would be associated with greater reductions in intraabdominal fat and increased skeletal muscle density.

Subjects and Methods

For inclusion in the study, subjects were required to be premenopausal and between 18–35 yr of age with a body mass index less than 26. In addition, subjects had to be weight stable (± 2 kg) and to have had no regular participation in exercise for 6 months before the study. Exclusion criteria included a history or evidence on physical examination

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or testing of the following: 1) diabetes, 2) orthopedic limitations or history of pathological fractures, 3) hypertension ($>160/90$ mm Hg), 4) use of prescription or over the counter medications that could affect glucose metabolism (including insulin and oral hypoglycemic agents), 5) smoking, or 6) alcohol consumption of more than 15 g alcohol/day. An oral glucose tolerance test was performed in all volunteers to determine glucose tolerance according to the criteria of the National Diabetes Group (12) to exclude diabetics. This study was approved by the committee for human research at the University of Vermont, and each participant gave written informed consent before the beginning of the study.

Overview of experimental protocol

Subjects were recruited from local newspaper advertisements in the Burlington, VT, and the University of Vermont community. After determination of eligibility by telephone, volunteers were scheduled for the first screening visit. On the screening visit, an oral glucose tolerance test, medical history, physical examination, maximum oxygen consumption test, and complete blood chemistry and profile were performed. Two weeks later, participants were scheduled for an overnight visit to the General Clinical Research Center at the University of Vermont. For 3 days before the overnight visit, participants were provided with standardized diets prepared by the metabolic kitchen at the General Clinical Research Center containing 55% carbohydrate, 25% fat, and 20% protein. During the afternoon of admission, we conducted body composition and body fat distribution measurements using dual energy x-ray absorptiometry and computed tomography. The following morning, the hyperinsulinemic-euglycemic clamp was performed. After successful completion of this testing sequence, volunteers were randomly assigned to the endurance exercise, resistance exercise, or control group. An identical posttesting sequence was performed, and these tests were performed 4 ± 1 days after the last exercise session.

Recruiting and screening

Based on our advertisements, 321 women were interviewed by telephone. Of these 321 women, 105 women consented to participate in screening procedures. Of these 105 women, 78 were deemed eligible and consented to participate in pretraining testing procedures. Of these 78 women, 74 were Caucasian, 2 were of Asian descent, and 2 were of Hispanic origin. They were randomized to either endurance training, resistance training, or control conditions after completion of physiological testing.

Exercise training programs

All workouts were preceded by a 10-min warm-up, which consisted of stretching of the major muscle groups and slow walking around the track. All women were taught to monitor their heart rates (HR). HRs were verified with a Polar Heart Rate monitor (Polar Electro, Port Washington, NY). The endurance-training program consisted of two parts: 1) weeks 1–16 were an endurance base-training phase; and 2) weeks 17–28 were an interval-recovery phase. Women trained on 3 nonconsecutive days/week for 6 months (28 weeks) under the supervision of a personal trainer.

The endurance base training consisted of four phases. The first phase (first 4 weeks) began with an exercise prescription of 25 min of slow jogging. Thereafter, the aerobic training program of each 4-week phase increased by 5 min. By the fourth phase (i.e. 16 weeks), women were jogging for approximately 40 min. Within the phases, the exercise intensity was increased by 5% of maximum HR (HR max) each week, so that by the end of the fourth week of the fourth phase, the training was 40 min at 90% of HR max.

The second part (weeks 16–28) of the endurance training program used interval training sessions. Women followed a detailed program of specific workouts aimed at increasing exercise duration and intensity. The interval sessions consisted of 45 min of 80% HR max training on Monday, four 5-min periods at 95% HR maximum with 3-min rests on Wednesday, and 45 min at 75–80% of HR max on Friday. By the final week of training, women successfully completed 60-min sessions at 85% of HR max.

Women randomized to resistance training exercised on 3 noncon-

secutive days during the week (e.g. Monday, Wednesday, and Friday) under the supervision of a personal trainer. Because of the need for test specificity, one repetition maximum (1-RM) evaluation of certain exercises used in the training program provided the most direct evaluation of the training gains made over the 6-month period. The 1-RM is defined as the maximum amount of resistance that can be moved through the full range of motion of an exercise for no more than one repetition. To determine the 1-RM, each subject initially performed three to five repetitions with the lightest weight possible to assure that proper technique was used. The trainer then selected a weight and asked the subject to perform the lift. After 3–4 min of rest, the next heaviest weight was selected, and the attempt was repeated until the subject could not complete the full lift. The same number of trials, time between trials, and order of exercises were used before and after training for the 1-RM test. Tests were administered before the start of the training program, midway through the program, and after the exercise program. The following exercises were evaluated for 1-RMs: leg press, bench press, military press, and seated rows.

Training was approximately 80% of 1-RM. Each training session included a warm-up of low intensity cycling for 5 min, followed by 10 min of static stretching of all of the major muscle groups used in training. Each exercise session was individually monitored for optimal progression by two trainers. The resistance program consisted of the following exercises: 1) leg press, 2) bench press, 3) leg extensions, 4) shoulder press, 5) sit-ups, 6) seated rows, 7) tricep extensions, 8) arm curls, and 9) leg curls. The exercises provided a total body resistance training program for all of the major muscle groups of the body. The volunteer was given a target load range and attempted to keep each set ($n = 3$) within the target range by adjusting the load to allow the prescribed number ($n = 10$) of repetitions. Resting periods were 1–1.5 min between sets.

During the conduct of the training programs, 28 women dropped out of the study, yielding a dropout rate of 36%. The reasons for dropouts included 1) noncompliance with training ($n = 18$), 2) relocation ($n = 3$), 3) injury related to endurance training ($n = 3$), 4) refused posttesting ($n = 2$), 5) health problems not related to training ($n = 1$), and 6) pregnancy ($n = 1$). Thus, 51 women (17 resistance, 14 endurance, and 20 control) satisfactorily completed all pre- and posttesting procedures and the 6-month training program. The exercising women successfully completed 90% of all exercise-training sessions. Oral contraceptive use was 47% in resistance-trained women (8 of 17), 50% in endurance-trained women (7 of 14), and 50% in controls (10 of 20).

Body composition and adipose tissue distribution

Fat mass and fat-free mass (FFM) were measured by dual energy x-ray absorptiometry using a DPX-L densitometer (Lunar Corp., Madison, WI) as previously described (19). All scans were analyzed using the Lunar Corp. version 1.3 DPX-L extended analysis program for body composition. The test-retest coefficient of variation for this measurement was 1.2% for fat mass and 2% for FFM, respectively.

Visceral and sc adipose tissue areas were measured by computed tomography with a GE High Speed Advantage CT scanner (General Electric Medical Systems, Milwaukee, WI) as previously described (19). Subjects were examined in the supine position with both arms stretched above the head. The scan was performed at the L4–L5 vertebrae level using a scout image of the body to establish the precise scanning position. Visceral adipose tissue area was quantified by delineating the intraabdominal cavity at the internal most aspect of the abdominal and oblique muscle walls surrounding the cavity and the posterior aspect of the vertebral body with the computer interface of the scanner. Adipose tissue was highlighted and computed using an attenuation range from -190 to -30 Hounsfield units (HU) (20). The sc adipose tissue area was quantified by highlighting adipose tissue located between the skin and the external-most aspect of the abdominal muscle wall. The same individual analyzed all scans, and the intraclass correlation for repeated analysis of 10 scans was 0.99 in 10 women. Computed tomography was also used to measure cross-sectional areas of midthigh muscle and adipose tissue and to characterize muscle attenuation. With the subject supine, a 5-mm cross-sectional scan of both legs was obtained, located at the midpoint between the anterior iliac crest and the top of the patella. In image analysis, areas of adipose tissue and skeletal muscle were measured by selecting the following region of interest defined by at-

tenuation values: -190 to -30 HU for adipose tissue and 0-100 HU for muscle.

Cardiorespiratory fitness

Maximum aerobic capacity ($\text{VO}_{2\text{max}}$) was determined from an incremental exercise test on a treadmill to volitional exhaustion, as previously described (21, 22). After an initial 3-min warm-up, the speed was held constant, and the grade was increased by 2.5% every 2 min. The criteria for achieving a $\text{VO}_{2\text{max}}$ were 1) a respiratory exchange ratio greater than 1.0, 2) a HR at or above the age-predicted maximum, and 3) no further increase in oxygen consumption with an increasing workload. At least two of these criteria were met by all volunteers. Test-retest conditions for nine individuals (on two occasions, tested 1 week apart) yielded an intraclass correlation of 0.94 and a coefficient of variation of 3.8% in our laboratory.

Insulin sensitivity

We measured insulin sensitivity by the hyperinsulinemic-euglycemic clamp technique as described by DeFronzo *et al.* (23) and as previously reported in our laboratory (10, 24). Briefly, a Teflon catheter was inserted into the antecubital vein for the infusions of insulin and dextrose. Another Teflon catheter was retrogradely placed into the dorsal vein of the contralateral hand and used for the blood draws during the clamp procedure. This hand was placed in a hot box and warmed to 50°C for arterialization of blood. At 0 min, a continuous infusion of insulin was started at a constant rate of 40 mU/m² body surface area·min. At the same time, a variable infusion of 20% dextrose was started to maintain fasting glycemia at $\pm 5\%$ (80 ± 4.4 mg/dL in endurance-trained women, 80 ± 6.4 mg/dL in resistance-trained women, and 81 ± 6.2 mg/dL in controls). Blood samples for glucose measurement were taken every 5 min for insulin measurement at -30, -10, 0, 30, 60, 70, 90, 105, and 120 min of the clamp. The insulin levels attained during the last 30 min of the clamp (90-120 min) before training were 75 ± 23 $\mu\text{U}/\text{mL}$ in endurance-trained women 74 ± 21 $\mu\text{U}/\text{mL}$ in resistance-trained women, and 76 ± 20 $\mu\text{U}/\text{mL}$ in controls ($P = \text{NS}$). After training, insulin levels were 76 ± 28 $\mu\text{U}/\text{mL}$ in endurance-trained women, 72 ± 22 $\mu\text{U}/\text{mL}$ in resistance-trained women, and 75 ± 23 $\mu\text{U}/\text{mL}$ in controls (mean \pm SD). The insulin-stimulated glucose disposal rate (M-value) was calculated as the average glucose infusion rate (milligrams per min) during the last 30 min of the 120-min clamp. Hepatic glucose production has previously been shown to be fully suppressed with the insulin dose used in our study to induce hyperinsulinemia (25).

Biochemical analyses

Plasma glucose concentrations were measured using the glucose oxidase method with an automated glucose analyzer (YSI, Inc., Yellow Springs, OH). Serum insulin was measured by a double antibody RIA (Diagnostics Products, Los Angeles, CA). The coefficient of variation for glucose measurement using the glucose oxidase method is less than 1.9%. The coefficient of variation for serum insulin measurement by the doubly antibody RIA method is less than 5%.

Statistical analysis

Differences in physical characteristics among groups at baseline were examined using a one-way ANOVA. A 2×3 repeated measures ANOVA was used to detect changes with time within the treatment condition (pre/post) and among groups (endurance *vs.* resistance *vs.* control). The repeated measures factor was the repeated tests during the exercise programs. Pearson product-moment correlation coefficients were used to examine the association between variables. Significance was accepted at $P < 0.05$.

Results

Table 1 shows physical characteristics for endurance-training, resistance-training, and control subjects before and after training. There were no differences among the three groups in baseline physical characteristics, suggesting a successful randomization. As expected, endurance-trained individuals increased their absolute $\text{VO}_{2\text{max}}$ by 29% ($P < 0.01$), whereas no changes were noted in resistance-trained and control subjects. Similar results were obtained when $\text{VO}_{2\text{max}}$ data were expressed per kg BW. Body weight and body mass index increased in resistance-trained individuals (both $P < 0.05$) relative to those in the other two groups. Fat mass, as measured by dual energy x-ray absorptiometry, showed no change in endurance-trained, resistance-trained, or control women. FFM showed no change in endurance-trained women or controls, but increased in resistance-trained women (2 kg; $P < 0.001$). As expected, resistance-trained individuals increased their 1-RM for leg press (29%), bench press (39%), military press (29%), and seated rows (27%; data not shown in table form). There was no increase in $\text{VO}_{2\text{max}}$ in the resistance-trained group, and there was no change in strength in the endurance-trained group.

Figure 1 shows pre- and posttraining values for absolute values of insulin sensitivity and indexed per kg FFM. Insulin sensitivity increased in both endurance-trained (pre, 421 ± 107 ; post, 490 ± 133 mg/min; $P < 0.05$) and resistance-trained (pre, 382 ± 87 ; post, 417 ± 89 mg/min; $P = 0.06$) women, with no change in controls (pre, 470 ± 139 ; post, 480 ± 168 mg/min). When data were expressed per kg FFM, the improvement in glucose disposal persisted in endurance-trained women (pre, 10.5 ± 2.7 ; post, 12.1 ± 3.3 mg/kg FFM·min; $P < 0.05$), whereas no significant change was noted in resistance-trained (pre, 9.7 ± 1.9 ; 10.2 ± 1.8 mg/kg FFM·min) and controls (pre, 11.4 ± 2.8 ; post, 11.8 ± 3.5 mg/kg FFM·min). The improvement in $\text{VO}_{2\text{max}}$ was not related ($r = 0.02$; $P =$

TABLE 1. Changes in characteristics of younger women before and after training

| Physical characteristic | Endurance training (n = 14) | | Resistance training (n = 17) | | Control (n = 20) | |
|-----------------------------------|-----------------------------|-----------------|------------------------------|---------------|------------------|---------------|
| | Pre | Post | Pre | Post | Pre | Post |
| Age (yr) | 29 ± 5 | | 28 ± 3 | | 28 ± 4 | |
| $\text{VO}_{2\text{max}}$ (L/min) | 2.1 ± 0.5 | 2.7 ± 0.5^a | 2.1 ± 0.4 | 2.2 ± 0.3 | 2.2 ± 0.5 | 2.3 ± 0.4 |
| Ht (cm) | 163 ± 5 | | 164 ± 7 | | 165 ± 7 | |
| BW (kg) | 59 ± 5 | 59 ± 5 | 58 ± 6 | 60 ± 6^b | 60 ± 7 | 61 ± 8 |
| BMI (kg/m^2) | 22 ± 2 | 22 ± 2 | 22 ± 2 | 23 ± 2^b | 22 ± 2 | 22 ± 2 |
| DEXA measures | | | | | | |
| Fat mass (kg) | 16 ± 5 | 15 ± 4 | 16 ± 4 | 17 ± 4 | 17 ± 6 | 17 ± 6 |
| Fat-Free mass (kg) | 40 ± 4 | 40 ± 4 | 39 ± 4 | 41 ± 3^a | 39 ± 4 | 40 ± 3 |

Values are the means \pm SD. BMI, Body mass index; Pre/Post, 6 months of endurance or resistance training.

^a $P < 0.001$.

^b $P < 0.05$.

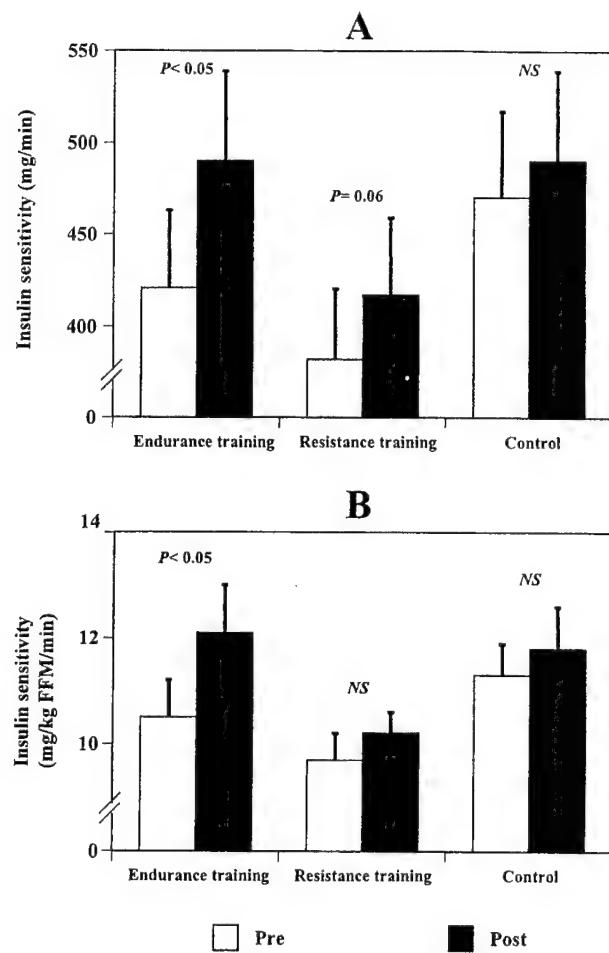


FIG. 1. Changes in insulin sensitivity before and after endurance training and resistance training and in control conditions. A, Values expressed on an absolute basis; B, values indexed per kg FFM. Values are the mean \pm SE. *, $P < 0.05$.

NS) to increased insulin sensitivity in the endurance-trained group.

Table 2 shows changes in abdominal adiposity, thigh adipose content, and lean tissue content before and after training. As expected for nonobese young women, baseline areas of sc adipose tissue and visceral adipose tissue were low. No significant changes were noted in sc or visceral adipose tissue in any group, as measured by computed tomography. Skeletal muscle characteristics, as estimated from computed tomography, are also shown in Table 2. We estimated quantities of midthigh fat area, thigh muscle area, and muscle attenuation values because of their reported relationship to insulin sensitivity (14, 15). Midthigh fat and muscle areas did not change in response to endurance or resistance training. On the other hand, we noted an altered composition in computed tomographic imaging in terms of higher mean attenuation values (HU) for both endurance-trained ($P < 0.05$) and resistance-trained ($P < 0.001$) individuals, suggesting a reduction in skeletal muscle lipid content. Changes in muscle attenuation in endurance-trained and resistance-trained individuals, however, were not related ($r = 0.24$; $P = \text{NS}$) to improved insulin sensitivity.

Discussion

Insulin resistance is linked with physical inactivity, increased visceral fat, and alterations in skeletal muscle characteristics. Moreover, we have shown the presence of these obesity-related phenotypes even in normal weight, apparently healthy, young women (10). Thus, interventions to improve or prevent the deterioration of the metabolic profile in this population have significant public health interest. The major findings are that both endurance and resistance training improve glucose disposal in young women, although by different mechanisms. An increase in the quantity of FFM from resistance training contributes to increased glucose disposal, probably from a mass effect, without altering the intrinsic capacity of the muscle to respond to insulin. On the other hand, endurance training enhances glucose disposal independent of changes in FFM, fat mass, or $\text{VO}_{2\text{max}}$, suggestive of an intrinsic change in the ability of the muscle to metabolize glucose.

Our experimental and methodological approaches lend credibility to our findings. Volunteers were randomly assigned to treatment conditions to control for known and unknown sources of experimental bias and subject self-selection. Moreover, the use of a control group decreases the influence of a placebo effect, and the application of euglycemic/hyperinsulinemic clamps and radiological imaging techniques provide direct measures of insulin sensitivity, body composition, and regional fat.

We originally hypothesized that endurance training would improve insulin sensitivity to a greater degree than resistance training due to a greater reduction in total fat and visceral fat. The physiological basis underlying our hypothesis is derived from several lines of evidence. First, endurance training may preferentially reduce visceral fat (26). Second, lower levels of visceral fat are associated with higher levels of insulin sensitivity and an improved metabolic profile (14–17, 27, 28). This hypothesis, however, was only partially supported by our findings in the present investigation. That is, endurance training improved insulin sensitivity to a greater degree than resistance training when expressed on an absolute basis or indexed per kg FFM. However, no change in total body fat, intraabdominal fat, or sc abdominal fat was found in endurance-trained women. Although it has been suggested that exercise training leading to a reduction in body fat is a prerequisite to improve glucose disposal (29), our findings as well as others (30) refute this assertion. Our results suggest that a vigorous program of endurance training improves glucose disposal independent of a reduction in total and regional body fat in nonobese young women.

It is possible that the volume of endurance exercise used in this study was inadequate to significantly modify total or regional body fat in young women who are not restricting energy intake. Indeed, it is possible that increased energy expenditure is compensated for by a greater energy intake, thus blunting any detectable change in total or regional body fatness (31, 32). Another potential reason underlying the absence of changes in body fatness is the potential of a ceiling effect. That is, it is difficult to reduce total or visceral fat in young women whose baseline levels are already low. This concept is supported by the findings of Wilmore and colleagues (33). They found only a small

TABLE 2. Changes in abdominal adiposity, thigh adipose, and lean tissue content in younger women before and after training

| Physical characteristic | Endurance training (n = 14) | | Resistance training (n = 17) | | Control (n = 20) | |
|--------------------------------------|-----------------------------|---------------------|------------------------------|---------------------|------------------|----------|
| | Pre | Post | Pre | Post | Pre | Post |
| CT scan measures | | | | | | |
| SAT area (L4-L5, cm ²) | 194 ± 86 | 193 ± 80 | 186 ± 74 | 186 ± 85 | 147 ± 66 | 210 ± 95 |
| VAT area (L4-L5, cm ²) | 40 ± 11 | 41 ± 13 | 36 ± 17 | 36 ± 13 | 36 ± 13 | 41 ± 15 |
| Thigh fat area (cm ²) | 98 ± 34 | 90 ± 24 | 108 ± 32 | 102 ± 38 | 98 ± 29 | 101 ± 31 |
| Thigh muscle area (cm ²) | 108 ± 11 | 114 ± 14 | 109 ± 19 | 115 ± 16 | 119 ± 16 | 113 ± 17 |
| Muscle attenuation (HU) | 49 ± 3 | 51 ± 1 ^a | 50 ± 2 | 52 ± 1 ^a | 48 ± 2 | 48 ± 2 |

Values are the means ± SD.

^a P < 0.05.

reduction in intraabdominal fat (-3.1 ± 0.7 cm²; mean ± SE) in 299 overweight young women after an endurance training program similar to the one conducted in this investigation. This small decrement in intraabdominal fat, compared to the absence of changes in our study, probably reflects their greater baseline intraabdominal values in their overweight cohort (67 ± 45 cm²) compared to our nonobese women (40 ± 11 cm²). Unfortunately, no measure of insulin sensitivity was reported in their investigation, thus rendering the effects of a reduction in intraabdominal fat on insulin sensitivity unknown. It is likely that the volume of physical activity performed in the present study may be more beneficial in preventing increases in total and regional fat with advancing age rather than in promoting fat loss (34, 35).

As insulin-mediated glucose disposal occurs mainly in muscle, one would hypothesize that an increase in the skeletal muscle mass component of FFM would augment glucose disposal. Our data support this suggestion, as the absolute change in glucose disposal (milligrams per min) was related to the increase in FFM ($r = 0.48$; $P < 0.05$) after resistance training. There was no change, however, in glucose disposal when indexed per kg FFM. We interpret this finding to suggest that improved insulin sensitivity probably reflects a mass effect without altering the intrinsic capacity of the muscle to respond to insulin. The failure of resistance training to enhance insulin sensitivity per kg FFM could be due to the inability of resistance exercise to increase muscle capillary density (36) or to change muscle fiber types in an insulin-sensitive direction (37).

It is likely that the timing of our insulin sensitivity values measured relative to the last bout of exercise (4 ± 1 days) may partially reflect a detraining response on insulin sensitivity. That is, insulin sensitivity decreases as a function of time once the individual stops endurance training. We would suggest, however, that our selection of the time period to measure insulin sensitivity was reasonable, given that previous studies (30, 38, 39) showed a sustained effect of exercise training on insulin sensitivity measured 4–7 days after the last exercise bout. The magnitude of increase in resistance-trained (9%) and endurance-trained (16%) individuals was comparable to the 11% and 13% increases reported by Hughes and colleagues (30) and Tonino (38), respectively. These increases in glucose disposal, however, are less than those reported by other investigators (24–28%) (40, 41) who measured insulin sensitivity 48 h after the last exercise bout, when the residual effects of exercise are still intact. Volunteers in these studies, however, were not randomly assigned to treatment

conditions, nor did these investigators consider the effects of resistance training on insulin sensitivity.

We also considered the hypothesis that changes in lipid content within the skeletal muscle may predict changes in insulin sensitivity in women undergoing exercise training. This hypothesis is based on recent data showing that fat deposition within muscle may be an important aspect of body composition that is linked to insulin resistance (14, 15, 18). We used computed tomographic imaging to examine skeletal muscle at the level of the midthigh. We noted an increase in the attenuation values in endurance- and resistance-trained women, which most likely reflects a decrease in skeletal muscle fat content. However, we noted no relation between the improved glucose disposal and increased muscle attenuation values in endurance-trained or resistance-trained women ($r = 0.24$; $P = NS$). Thus, it is likely that other mechanisms are operative. For example, several investigators have suggested that the long-term regulation of the number and function of glucose transporters (42, 43), capillary proliferation (44), and the number of IIa (red glycolytic) fibers that have a higher GLUT-4 content and are more insulin responsive (45) are implicated in the improved insulin sensitivity in response to chronic exercise.

We identified only three reports in the literature (6, 46, 47) that examined the effects of both endurance and resistance training on proxy measures of insulin sensitivity. These studies, however, are not directly comparable to the present investigation because of differences in age, sex, initial metabolic characteristics of the volunteers, and experimental design differences. Two of these studies (6, 46) were performed in older men with untreated abnormal glucose regulation. Moreover, volunteers self-selected their mode of exercise, which raises questions regarding the biases introduced with subject self-selection. Both of these studies used an oral glucose tolerance test and found that endurance and resistance training reduced plasma glucose and insulin responses to an equivalent oral glucose load, suggestive of improved glucose tolerance and insulin sensitivity. On the other hand, Eriksson and colleagues (47) examined older men and women in a 6-month nonrandomized endurance-training study and found no discernible effect on insulin sensitivity, as measured by an iv glucose tolerance test. In the same study they used a 10-week circuit training program and found improved insulin sensitivity (23%) in eight males, as assessed with a euglycemic/hyperinsulinemic clamp technique. We suggest that additional randomized studies, such as our own,

using similar methodologies and in different populations, are needed to confirm our findings.

In summary, enhanced glucose uptake after physical training in young women occurs with and without changes in FFM and body composition. Two different mechanisms appear to be operative. Improved insulin sensitivity in resistance-trained women is probably due to a mass effect (*i.e.* increased FFM), whereas endurance training enhances glucose disposal independent of changes in FFM or $\text{VO}_{2\text{max}}$, suggestive of an intrinsic change in the muscle to metabolize glucose. We conclude that both endurance and resistance training programs are effective interventions to enhance glucose disposal in young, nonobese women.

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APPENDIX III

**EFFECTS OF ENDURANCE AND RESISTANCE TRAINING ON TOTAL
DAILY ENERGY EXPENDITURE IN YOUNG WOMEN: A CONTROLLED
RANDOMIZED TRIAL**

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ABSTRACT

There exists considerable controversy regarding the impact of different modes of exercise training on total daily energy expenditure. To examine this question, young, non-obese women, were randomly assigned to a supervised six-month program of endurance training resistance training or control condition. Total daily energy expenditure was measured before and 10 days after a six month exercise program was completed with doubly labeled water. Body composition was determined from dual energy x-ray absorptiometry, VO_2 max from a treadmill test to exhaustion and muscular strength from 1-repetition maximum tests. Results showed that body composition did not change in endurance trained women, but VO_2 max increased by 18%. Resistance trained women increased muscular strength and fat-free mass (1.3 kg). Total daily energy expenditure did not significantly change when measured subsequent to the endurance or resistance training programs. Absolute resting metabolic rate increased in resistance trained women, but not when adjusted for fat-free mass. No change in physical activity energy expenditure was found in any of the groups. These results suggest that endurance and resistance training does not chronically alter total daily energy expenditure in free-living young women. Thus, the energy enhancing benefits of exercise training are primarily derived from the direct energy cost of exercise and not from a chronic elevation in daily energy expenditure in young, non-obese, women.

Key Words: Energy Expenditure, Exercise, Endurance Training, Resistance Exercise

INTRODUCTION

Regular physical activity is viewed as an adjunct to body weight control by facilitating the matching between daily energy expenditure and daily energy intake which favors a state of energy balance (1,2). It is clear that energy expenditure is transiently increased due to the direct and short-term carry-over effects of physical exercise (3). A body of literature, however, has accumulated that suggests that exercise training (endurance and/or resistance training) may chronically increase energy expenditure independent of the direct energy cost of the training program (4,5). The additional increase in energy expenditure may be mediated by several mechanisms including: an increase in resting metabolic rate (6-24); an increase in physical activity energy expenditure (24-26) and/or an increase in sympathetic nervous system activity (10, 11). This notion remains controversial, however, as other investigators have found no effect of endurance or resistance training on resting and/or physical activity energy expenditure after exercise training (27-36). Some investigators have even suggested that regular exercise training may decrease physical activity energy expenditure (37, 38).

Discrepant results among investigators regarding the effects of exercise training on daily energy expenditure may be partially due to differences in methodological and experimental design factors. First, physical exercise has been traditionally studied in isolation, without regard to its potential influence on total daily energy expenditure. This methodological limitation has recently been overcome with the application of doubly labeled water, which quantifies total daily energy expenditure in free-living individuals. Second, investigators have tended to rely on cross-sectional designs (ie, trained vs untrained individuals) to examine the impact of exercise training on daily energy expenditure. Cross-sectional experimental approaches, although experimentally convenient,

are fraught with potential confounders, such as subject self-selection and genetic biases. Third, the methodological assessment of daily energy expenditure has been problematic in free-living individuals. Investigators have tended to rely on physical activity questionnaires, accelerometers, pedometers, etc, which provide questionable estimates of daily energy expenditure (39). Fourth, there has been some confusion between the “chronic” and “acute” effects of exercise on energy metabolism. That is, most studies have examined energy expenditure during or immediately after the end of the exercise program (within 24 hours), thereby obscuring the potential chronic effect of exercise on energy metabolism. Relative to this point, it is important to consider that suspension of exercise training for 72 hours is associated with a decrease in resting energy expenditure (40).

Thus, in an attempt to partially resolve some of these controversies in the literature, we examined the effects of both endurance and resistance training on total daily energy expenditure and its components in young, non-obese sedentary women. We performed our measures of daily energy expenditure before and 10 days after the exercise programs were completed. Furthermore, we used a randomized controlled clinical trial to help control for known and unknown sources of experimental bias.

METHODS

Subjects. Criteria for subject inclusion was: premenopausal and age between 18 to 35 years; a body mass index less than 26. In addition, subjects had to be weight stable ($\pm 2\text{kg}$) and not participating in a regular exercise program for six months prior to the study. Exclusion criteria included a history or

evidence on physical examination or testing of the following: 1) diabetes (41); 2) orthopedic limitations or history of pathologic fractures, 3) hypertension ($>160/90$ mmHg); 4) use of prescription or over the counter medications which could affect energy expenditure; 5) smoking; and 6) alcohol consumption greater than 15g of alcohol/day (1 alcoholic beverage). An oral glucose tolerance test (OGTT) was performed in all volunteers to determine glucose tolerance according to the criteria of the National Diabetes Group (41) to exclude diabetics. This study was approved by the Committee for Human Research at the University of Vermont and each participant gave their written, informed consent prior to the beginning of the study.

Overview of Experimental Protocol: Subjects were recruited from local newspaper advertisements in the Burlington, Vermont and the University of Vermont community. After determination of eligibility by telephone, volunteers were scheduled for the first screening visit. On the screening visit, an oral glucose tolerance test, medical history, physical examination, maximum oxygen consumption test and complete blood chemistry and profile were performed. Two weeks later, participants were scheduled for an overnight visit to the General Clinical Research Center (GCRC) at the University of Vermont. For three days prior to the overnight visit, participants were provided with standardized diets prepared by the metabolic kitchen at the GCRC containing 55% carbohydrate, 25% fat and 20% protein. During the afternoon of admission, we conducted body composition measurements using dual energy x-ray absorptiometry. As well, participants were administered the dose of doubly labeled water as described below and baseline urine was collected for analysis. The next morning, we measured resting metabolic rate using indirect calorimetry and subjects were submitted to the treadmill stress test. Following 10 days of normal daily activity,

participants returned to the GCRC for post-urine collection. Upon successful completion of this testing sequence, volunteers were randomly assigned to endurance exercise, resistance exercise or control conditions. An identical sequence of post-testing measures were performed following the six month intervention period. Because the goal of the study was to examine the effects of endurance and resistance training after the programs were completed, post-training measures were conducted approximately 72 hours after the last exercise bout. TEE was then measured over the following ten days. We have previously reported changes in insulin sensitivity from this group (42).

Recruiting and Screening: Based on our advertisements, 321 women were interviewed by telephone. Of these 321 women, 105 women consented to participate in screening procedures. Of these 105 women, 89 were deemed eligible and consented to participate in pre-training testing procedures. Of these 89 women, 85 were Caucasian, 2 of Asian descent and 2 of Hispanic origin. They were randomized to either aerobic training, resistance training or control condition. A total of 31 women dropped out of the study for various reasons (detailed in the *Exercise training programs section*) and 10 women were not dosed with doubly label water because of a worldwide shortage. Thus, the final number of women who completed the study was as following: aerobic training n = 13, resistance training n = 16 and control condition n = 19.

Exercise Training Programs. All endurance exercise sessions were preceded by a 10 min warm-up which consisted of stretching of the major muscle groups and slow walking around the track. All women were taught to monitor their heart rates (HR). HRs were verified with a Polar Heart Rate monitor (Polar Electro, Port Washington, NY).

The endurance-training program consisted of two parts: 1) weeks 1 to 16 were an endurance base-training phase; and 2) weeks 17 to 24 were an interval-training phase (both described below). Women trained on 3 non-consecutive days/week for 6 months (24 weeks) under the supervision of a personal trainer.

Endurance base-training phase (weeks 1-16). The first four weeks consisted of an exercise prescription of 25 min of slow jogging and/or brisk walking at 60% of heart rate. Thereafter, every 4-week period would be performed as follows: at the beginning of the 4-week period, time would increase by 5 minutes and intensity would increase by approximately 10% of heart rate every week (from 60% at week 1 to 90% of heart rate at week 4). At the beginning of the next 4-week period, time would increase by another 5 minutes and intensity would be scaled back to 60% of heart rate. On week 16, women were walking or jogging for 40 min at 90% of maximal heart rate.

Interval training (weeks 17-24). Women followed a detailed program of specific workouts aimed at increasing exercise duration and intensity. The interval sessions consisted of 45 min of 80-90% HR max training on Monday, four 5 min periods at 95% HR maximum with 3-min rests on Wednesday, and 45 min at 80-90% of HR max on Friday.

Women randomized to resistance training exercised on 3 non-consecutive days during the week (eg, Monday, Wednesday, and Friday) under the supervision of a personal trainer. Because of the need for test specificity, 1 repetition maximum (RM) evaluations of certain exercises used in the training

program provided the most direct evaluation of the training gains made over the 6-month period. The 1-RM is defined as the maximum amount of resistance that can be moved through the full range of motion of an exercise for no more than one repetition. To determine the 1 RM, each subject initially performed 3 to 5 repetitions with the lightest weight possible to be sure proper technique is used. The trainer then selected a weight and asked the subject to perform the lift. Following 3-4 minutes of rest, the next heaviest weight was selected and the attempt was repeated until the subject could not complete the full lift. The same number of trials, time between trials and order of exercises were used before and after training for the 1-RM test. Tests were administered prior to the start of the training program, midway through the program and after the exercise program. The following exercises were evaluated for 1 RM's: leg press, bench press, shoulder press and seated rows. Training was approximately 60-80% of 1 RM at the beginning with the goal of having all subjects train at 80% 1RM by the second week of the program. Each training session included a warm-up of low intensity cycling for 5 min, followed by a 10 min of static stretching of all the major muscle groups used in training. The resistance program consisted of the following exercises: 1) leg press, 2) bench press; 3) leg extensions; 4) shoulder press; 5) sit-ups; 7) seated rows; 8) tricep extensions; 9) arm curls; and 10) leg curls. The exercises provided a total body resistance training program for all of the major muscle groups of the body. The volunteer was given a target load range and attempted to keep each set within the target range by adjusting the load to allow the prescribed number (n=10) of repetitions. Rest periods were 1-1.5 minutes between sets.

During the conduct of the training programs, 31 women dropped out of the study, yielding a dropout rate of 32%. The reasons for dropouts included: 1) non-compliance with training (n=16); 2)

relocation (n=3); 3) injury related to endurance training (n=5); 4) refused post-testing (n=2;) 5) health problems not related to training (n=3) and 6) pregnancy (n=2). Thus, 58 women (20 resistance, 20 endurance, and 18 control) satisfactorily completed all pre-and post-testing procedures and the six-month training program. Because of a shortage of doubly labeled water, we were able to dose 48 subjects. Herein, we report the results of 48 subjects who completed all tests. The exercising women successfully completed 90% of all exercise training sessions. Oral contraceptive use was 70% in resistance-trained women (14 of 20), 35% in endurance-trained women (7 of 20), and 50% in controls (9 of 18) (chi-square p=0.09).

Measures of Energy Expenditure:

Total daily energy expenditure (TEE): TEE was determined from doubly labeled water over a 10-day period before and after the training programs. After the exercise program was completed, total daily energy expenditure was measured during a 10 day-period, starting 72 hours after the last exercise session, during which subjects were asked to abstain from any structured exercise program. During that period, subjects were asked to maintain their normal daily physical activity routines. Specific details about the doubly labeled water technique the analyses have previously been described (43,44).

Resting metabolic rate (RMR): RMR was measured for 60 min by indirect calorimetry using the ventilated hood technique (9,10), following an overnight, 12-hour fast in the General Clinical Research Center. RMR was specifically measured on the first day of urine collections for the doubly labeled water. Respiratory gas analysis was performed using a Deltatrac metabolic cart

(Sensormedics, Yorba Linda, CA). RMR (kcal d^{-1}) was calculated from the equation of Weir (45). The test-retest correlation coefficient within one week has been shown to be 0.90 for RMR in our laboratory. The respiratory quotient (RQ) was calculated from indirect calorimetry. Test-retest correlation coefficients for respiratory quotient are 0.91 in our laboratory.

Physical activity energy expenditure (PAEE): Doubly labeled water in conjunction with indirect calorimetry was used to measure PAEE. PAEE was calculated using the following equation: PAEE = TEE - (RMR + TEM), as previously reported from our laboratory (26,37). TEM was estimated as 10% of total daily energy expenditure (23).

Body composition. Fat mass and fat-free mass were measured by dual energy x-ray absorptiometry (DEXA) using a Lunar DPX-L densitometer (Lunar Co, Madison, WI) as previously described (37,42). All scans were analyzed using the Lunar Version 1.3 DPX-L extended-analysis program for body composition. Test-retest coefficient of variation for this measurement was 1.2% for fat mass and 2% for fat-free mass, respectively.

Cardiorespiratory fitness. Maximum aerobic capacity ($\text{VO}_2 \text{ max}$) was determined from an incremental exercise test on a treadmill to volitional exhaustion, as previously described (42). After an initial 3-minute warm-up, the speed was held constant and the grade was increased by 2.5% every 2 minutes. The criteria for achieving a $\text{VO}_2 \text{ max}$ were: a respiratory exchange ratio greater than 1.1; 2) a heart rate at or above the age-predicted maximum; and 3) no further increase in oxygen consumption with an increasing workload. At least two of these criteria were met by all volunteers.

Test-retest conditions for 9 individuals (on two occasions tested one week apart) yielded an intra-class correlation of 0.94 and a CV of 3.8% in our laboratory.

Statistical Analysis: Differences in physical characteristics among groups at baseline were examined using a one-way analysis of variance. A 2 x 3 repeated measures analysis of variance was used to detect changes with time within the treatment condition (pre/post) and among groups (endurance vs resistance vs control). The repeated measures factor was the repeated tests during the exercise programs. Significance was accepted at P<0.05.

RESULTS

Table 1 shows physical characteristics for endurance-trained, resistance-trained and control subjects before and after training. There were no differences among the three groups in baseline physical characteristics, suggesting a successful randomization. Body weight and body mass index did not change in endurance-trained, resistance-trained, or control groups. Fat mass showed no change in endurance-trained, resistance-trained, or control women. Fat-free mass showed no change in endurance-trained or control women, but increased in resistance-trained women (P<0.05) compared to controls. Endurance-trained individuals increased their VO₂ max by 18%, whereas no changes were noted in resistance-trained or control subjects for this variable. Resistance-trained women increased their 1-RM for leg press (29%), bench press (39%), shoulder press (29%), and seated rows (27%, data not shown).

Table 2 shows data for total daily energy expenditure and its components (RMR and physical activity energy expenditure) in endurance-trained, resistance-trained, and control subjects before and after training. There were no differences at baseline among groups in any component of daily energy expenditure. Following the training intervention, there were no significant or chronic changes in any group in total daily energy expenditure. Absolute resting metabolic rate (RMR) increased in resistance-trained women ($P < 0.05$) but did not significantly change when adjusted for fat-free mass. There was no change in absolute or relative RMR in either the endurance-trained or control group. Physical activity energy expenditure, as measured by doubly labeled water, showed no changes in any group following the training period. Similarly, fasting respiratory quotient was not different among groups at baseline and showed no changes in response to endurance or resistance training.

DISCUSSION

We examined the effects of both endurance and resistance training on total daily energy expenditure and its components in young, non-obese sedentary women, using a randomized clinical trial. We found that despite significant increases in $\text{VO}_2 \text{ max}$ and muscular strength in endurance and resistance trained groups, respectively, total daily energy expenditure was unchanged. These findings argue against a chronic enhancing effect of endurance or resistance exercise on total daily energy expenditure in free-living young women.

Our experimental design and methods lend credibility to our findings. First, the use of a randomized, controlled, clinical trial helps control for experimental sources of known and

unknown biases, including subject self-selection, seasonality, etc. To our knowledge, no previous study has used this experimental approach and the majority of exercise studies lack a control group. Second, most studies have focused on the exclusive measurement of resting metabolic rate (6,7,9-12,14-23,27,32,33,35), whereas total daily energy expenditure is of greater clinical relevance with respect to body weight regulation. Some studies have measured daily energy expenditure *during* the exercise training program (13,24,25,36-38). This approach provides useful information on the acute energetic adaptations to exercise training, but not on chronic adaptations. Lastly, several investigators have determined the effects of chronic training on daily energy expenditure in a room calorimeter, which unfortunately underestimates physical activity energy expenditure (8,29,34). This study extends these previous studies by examining total daily energy expenditure in endurance and resistance trained young women.

The effects of endurance training on total daily energy expenditure are controversial (1-5). Although it is intuitively appealing from a public health perspective to hypothesize that endurance training may chronically increase energy expenditure beyond the energy cost of the training program itself (4,5), these assumptions remain unsubstantiated. This is partially due to the timing of the metabolic measurements relative to the exercise program. Several studies have measured daily energy expenditure during exercise training. For example, we (37) and others (38) reported no change in daily energy expenditure in response to endurance training in older men and women. This was due, partially, to a compensatory decline in non-exercising physical activity which offset the direct energetic cost of the endurance exercise program. Still other investigators have reported an increase in daily energy expenditure with endurance training (25,35,46), but this was due to the

direct energetic cost of the endurance exercise and not to a change in resting metabolic rate or physical activity energy expenditure during non-exercising time. It has even been suggested that energetic adaptations to exercise training are gender-specific, in which exercise may stimulate habitual physical activity in males, but less so in females (25). Despite significant increases in VO₂ max in the present study, total daily energy expenditure after training was similar to pre-training values in young women. Thus, we interpret these findings to suggest that there is no chronic or “carry-over” effect of endurance training on daily energy expenditure subsequent to the exercise programs. Had we encouraged participants to be more physically active, they may have been more capable of doing so in their trained state; however, an increase in physical activity did not occur spontaneously.

Our results illustrate the differences that may be obtained from cross-sectional vs longitudinal investigations. That is, previous cross-sectional studies have suggested that a higher VO₂ max is associated with higher resting metabolic rate per kilogram of fat-free weight and physical activity energy expenditure (6,9-12 16-21,26,46), although these results are discrepant (32-34). Given the present findings, we would suggest that cross-sectional physiological relationships do not always reflect physiological changes observed in exercise intervention studies. Our study, however, cannot address the question of whether years of participation in endurance exercise training influences daily energy expenditure in young women.

The effect of resistance training on daily energy expenditure, using doubly labeled water, has been studied less extensively than endurance training. We are aware of only two studies that

examined the effects of resistance training on total daily energy expenditure (24,36). Van Etten and colleagues (36) measured daily energy expenditure in young men with doubly labeled water before and *during* an 18-week resistance training program. They found a mean increase in daily energy expenditure 18 weeks into a resistance training program that approached 260 kcal/day, of which the majority was due to the direct caloric cost of the resistance training program (47). These findings are surprising based on the fact that resistance training has a very low energetic cost compared to aerobic training. Sleeping metabolic rate and free-living physical activity were unaltered in response to resistance training, despite an increase in fat free mass (2.1. kg). Thus, the increase in daily energy expenditure was due primarily to the resistance training program, and not due to an enhancing effect on resting and/or physical activity energy expenditure. On the other hand, Hunter and colleagues (24) found that 6-months of resistance training significantly increased daily energy expenditure in addition to the direct energy cost of the resistance training program. This increase was due to both an increase in resting metabolic rate and physical activity energy expenditure in older individuals when they were not exercising. The results are not directly comparable to the present investigation as our measures were conducted after the endurance and resistance training programs were completed. Although we cannot rule out that energetic adaptations may occur acutely *during* endurance and resistance training programs that may serve to acutely enhance the total energy cost of the exercise programs, we would suggest that these adaptations are probably short-lived.

One may suggest that we were overly optimistic to hypothesize that favorable changes in physiology (i.e., increase in VO₂ max and muscular strength) may result in a spontaneous increase in daily energy expenditure in inactive, young women. It is possible that additional behavioral

interventions and counseling are required to alter the physical activity behavior patterns of young women once a structured and heavily supervised exercise program is terminated. Another potential reason for the absence of changes in daily energy expenditure in our population is a “ceiling effect.” That is, although our subjects were not regularly participating in a regular physical activity program, our subjects were not impaired in their ability to participate in an exercise training program. Thus, it may be difficult to augment physical activity energy expenditure in individuals whose physical capacity is not limited by a poor fitness level. It is interesting to note that approximately one-third of the volunteers enrolled in our study dropped out for various reasons. The primary reason for the dropouts was non-compliance, in which women failed to maintain or lost interest in participating in a regular exercise training program. The physiological characteristics of these women (ie, baseline body weight, fitness, etc) were similar to those who completed our study. Thus, we were unable to identify physiological characteristics that may have predicted non-compliance in our study.

One limitation of the study pertains to doubly labeled water measurement that needs to occur over a 10-day period. It has been shown that after 3 days, a detraining effect on RMR can be observed (40) and it is possible that the lack of a stimulation effect of exercise on total energy expenditure may reflect a partially detraining effect over the 10-day period. However, resting energy expenditure was measured within 72 hours of the last exercise session; thus we would suggest that the acute effects of exercise had probably dissipated but that a detraining effect had not completely occurred yet.

In conclusion, our results demonstrate that chronic training does not alter daily energy

expenditure or its components after the end of the exercise program. The energy enhancing benefits derived from endurance or resistance training are probably short-lived and derived primarily from the direct energy cost of the physical activity and not from a chronic elevation in daily energy expenditure in young women.

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Table 1. Physical characteristics pre and post 6-month training intervention in 48 young, non-obese, sedentary women.

| Physical characteristics | Aerobic training n=13 | | Resistance training n=16 | | Control condition n=19 | |
|----------------------------|--------------------------|------------------------|-----------------------------|-------------------------|---------------------------|------------|
| | Pre | Post | Pre | Post | Pre | Post |
| Age (yrs) | 28 ± 4 | - | 28 ± 4 | - | 28 ± 4 | - |
| Height (cm) | 163 ± 5 | 163 ± 5 | 164 ± 7 | 164 ± 7 | 165 ± 6 | 165 ± 6 |
| Weight (kg)* | 58 ± 5 | 60 ± 5 | 58 ± 6 | 59 ± 5 | 61 ± 7 | 62 ± 8 |
| BMI (km/m ²) | 22.0 ± 2.0 | 22.1 ± 1.9 | 21.6 ± 2.3 | 22.2 ± 2.2 | 22.1 ± 1.8 | 22.4 ± 2.1 |
| Fat mass (kg) | 14.5 ± 4.4 | 14.7 ± 3.6 | 15.8 ± 3.6 | 15.7 ± 2.9 | 17.1 ± 6.1 | 17.3 ± 6.0 |
| Fat-free mass (kg) | 40.2 ± 4.1 | 40.9 ± 3.9 | 39.2 ± 4.1 | 40.5 ± 3.4 ^a | 41.4 ± 3.9 | 41.2 ± 3.6 |
| VO _{2max} (L/min) | 2.2 ± 0.5 | 2.6 ± 0.6 ^a | 2.1 ± 0.3 | 2.2 ± 0.3 | 2.3 ± 0.5 | 2.4 ± 0.4 |

Values are means ± SD.

^a p<0.05

* The difference between total body weight and the sum of fat mass and fat-free mass is bone mass.

Table 2. Energy expenditure data pre and post 6 month training intervention in young, non-obese, sedentary women.

| Energy Expenditure Component | Endurance Training (n=13) | | Resistance Training (n=16) | | Control (n=19) | |
|--|------------------------------|-------------|-------------------------------|-------------------------|-------------------|-------------|
| | Pre | Post | Pre | Post | Pre | Post |
| Total Daily Energy Expenditure (kcal/day) | 2581 ± 530 | 2599 ± 440 | 2473 ± 429 | 2364 ± 285 | 2573 ± 355 | 2610 ± 426 |
| Resting Metabolic Rate (kcal/day) | 1388 ± 78 | 1362 ± 137 | 1351 ± 127 | 1411 ± 114 ^a | 1401 ± 140 | 1432 ± 166 |
| Physical Activity Energy Expenditure(kcal/day) | 943 ± 429 | 976 ± 406 | 845 ± 425 | 694 ± 248 | 928 ± 258 | 946 ± 289 |
| Respiratory Quotient | 0.83 ± 0.03 | 0.87 ± 0.08 | 0.85 ± 0.02 | 0.85 ± 0.03 | 0.83 ± 0.04 | 0.85 ± 0.04 |

Values are the means ± SD.

^a p<0.05

APPENDIX IV

| | DOB | Age | Ethnic | group | orcon | Start | Status | Pre Date | Post Date | MONW | Geno # | Geno | LMP_1 | LMP-2 | fh_dm |
|----------------------|-------------|-------------|-------------|------------|------------|-------------|-------------|--------------|--------------|-------------|-------------|-------------|--------------|-------------|-------------|
| Type: | Integer | Integer | String | Integer | Integer | Long I... | Integer | Long Integer | Long Integer | Integer | Integer | String | Long Inte... | Long Int... | Integer |
| Source: | User Ent... | User Ent... | User Ent... | User En... | User En... | User Ent... | User Ent... | User Entered | User Entered | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... |
| Class: | Continu... | Nominal | Continu... | Continu... | Continu... | Continuo... | Continuo... | Continuous | Continuous | Continuous | Continuous | Nominal | Continuous | Continuous | Continuo... |
| Format: | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Dec. Places: | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Mean: | 251.38 | 28.789 | . | 1.000 | .368 | 358333.... | 2.000 | 35826.211 | 36044.526 | 1.737 | 700.813 | . | 36142.875 | 36207.250 | .421 |
| Std. Deviation: | 1415.999 | 4.171 | . | 0.000 | 496 | 309.741 | 0.000 | 316.835 | 345.204 | .452 | 279.464 | . | 199.317 | 296.405 | .507 |
| Std. Error: | 324.852 | 957 | . | 0.000 | .114 | 71.059 | 0.000 | 72.687 | 79.195 | .104 | 69.866 | . | 70.469 | 85.565 | .116 |
| Variance: | 2.005E6 | 17.398 | . | 0.000 | .246 | 96939.... | 0.000 | 100384.731 | 119165.819 | .205 | 78100.029 | . | 39727.268 | 87856.023 | .257 |
| Coeff. of Variation: | .056 | .145 | . | 0.000 | 1.345 | .009 | 0.000 | .009 | .010 | .260 | .399 | . | .006 | .008 | 1.205 |
| Minimum: | 22753 | 22 | . | 1 | 0 | 35485 | 2 | 35468 | 35570 | 1 | 232 | . | 35809 | 35741 | 0 |
| Maximum: | 27441 | 35 | . | 1 | 1 | 36343 | 2 | 36371 | 36581 | 2 | 1070 | . | 36371 | 36559 | 1 |
| Range: | 4688.000 | 13.000 | . | 0.000 | 1.000 | 858.000 | 0.000 | 903.000 | 1011.000 | 1.000 | 838.000 | . | 562.000 | 818.000 | 1.000 |
| Count: | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 16 | 16 | 8 | 12 | 19 | |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 4 | 12 | 8 | 1 | |
| Sum: | 477627 | 547.000 | . | 19.000 | 680843 | 38.000 | 680698.000 | 684846.000 | 33.000 | 111213.000 | . | 289143.000 | 434487.0... | 8.000 | |
| Sum of Squares: | 1.204E... | 16061 | . | 19.000 | 7.000 | 2.44E10 | 76.000 | 24388636778 | 24687094654 | 61.000 | 9029711.... | . | 1.045E10 | 1.573E10 | 8.000 |

Endurance Group N=19

| | DOB | Age | Ethnic | group | orcon | Start | Status | Pre Date | Post Date | MONW | Geno # | Geno | LMP_1 | LMP_2 | fh_dm |
|----|-------|-----|--------|-------|-------|-------|--------|----------|-----------|------|--------|------|-------|-------|-------|
| 1 | • | • | w | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 24455 | 32 | w | 1 | 0 | 35827 | 2 | 35821 | 36396 | 1 | 970 | 11 | 36167 | 36369 | 1 |
| 3 | 23762 | 33 | w | 1 | 0 | 35849 | 2 | 35832 | 36082 | 2 | 621 | 11 | 35809 | 36068 | • |
| 4 | 24423 | 30 | w | 1 | 1 | 35487 | 2 | 35468 | 35720 | 2 | • | • | 0 | 0 | 0 |
| 5 | 23521 | 33 | w | 1 | 1 | 35893 | 2 | 35880 | 36083 | 1 | 645 | 11 | • | • | 0 |
| 6 | 23616 | 33 | w | 1 | 1 | 35965 | 2 | 35965 | 36168 | 1 | 829 | 11 | • | 36157 | 1 |
| 7 | 27441 | 22 | w | 1 | 0 | 35709 | 2 | 35696 | 35909 | 1 | 506 | 11 | • | 35900 | 1 |
| 8 | 24020 | 33 | w | 1 | 0 | 36139 | 2 | 36139 | 36361 | 2 | 960 | 11 | 36120 | 36361 | 0 |
| 9 | 26478 | 24 | w | 1 | 1 | 35529 | 2 | 35517 | 35727 | 2 | • | • | • | 0 | 0 |
| 10 | 23344 | 33 | w | 1 | 0 | 35704 | 2 | 35691 | 35570 | 2 | 493 | 11 | • | 0 | 0 |
| 11 | 26562 | 26 | w | 1 | 1 | 36220 | 2 | 36215 | 36412 | 1 | 982 | 12 | 36194 | 36390 | 0 |
| 12 | 26795 | 24 | w | 1 | 0 | 35916 | 2 | 35907 | 36117 | 2 | 694 | 11 | 35890 | 36103 | 0 |
| 13 | 26796 | 23 | h | 1 | 0 | 35485 | 2 | 35472 | 35710 | 2 | 232 | 12 | • | 0 | 0 |
| 14 | 25912 | 28 | w | 1 | 0 | 36318 | 2 | 36315 | 36532 | 2 | 1020 | 11 | 36299 | 36525 | 1 |
| 15 | 25697 | 29 | w | 1 | 1 | 36343 | 2 | 36371 | 36565 | 2 | 1070 | 11 | 36371 | 36550 | 0 |
| 16 | 25912 | 26 | w | 1 | 0 | 35492 | 2 | 35480 | 35685 | 2 | • | • | 0 | 0 | 0 |
| 17 | 22753 | 35 | w | 1 | 1 | 35580 | 2 | 35570 | 35769 | 2 | 454 | 11 | • | 35764 | 1 |
| 18 | 24287 | 32 | h | 1 | 0 | 36318 | 2 | 36314 | 36581 | 2 | 1005 | 11 | 36293 | 36559 | 1 |
| 19 | 26053 | 25 | w | 1 | 0 | 35557 | 2 | 35544 | 35755 | 2 | 437 | 11 | • | 35741 | 1 |
| 20 | 25800 | 26 | w | 1 | 0 | 35512 | 2 | 35501 | 35704 | 2 | 295 | 12 | • | 0 | 0 |

| | height1 | weight1 | BMI1 | height2 | weight2 | BMI2 | sbp_1 | sbp_2 | dbp_1 | dbp_2 | BMD total (g/cm2) | BMD total 2 | BMC tot (g) |
|----------------------|--------------|---------------|------------|---------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|
| Type: | Real | Real | Real | Real | Real | Real | Integer | Real | Real | Real | Real | Real | Integer |
| Source: | User Ente... | User Enter... | User E... | User Enter... | User Enter... | User E... | User Ent... | User Ent... | User Ent... | User Ent... | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuo... | Continuo... | Continuo... | Continuo... | Continuo... | Continuous | Continuous | Continuous |
| Format: | Free Form... | Free Form... | Free F... | Free Form... | Free Form... | Free F... | • | • | • | • | Free Format Fi... | Free Format Fi... | Free Format Fi... |
| Dec. Places: | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mean: | 162.742 | 21.896 | 162.763 | 58.521 | 22.107 | 112.105 | • | 63.895 | • | 1.169 | 1.178 | 2524.632 | |
| Std. Deviation: | 5.290 | 6.545 | 2.272 | 5.442 | 6.544 | 2.330 | 10.949 | • | 9.533 | • | .062 | .060 | 270.547 |
| Std. Error: | 1.214 | 1.502 | .521 | 1.249 | 1.501 | .534 | 2.512 | • | 2.187 | • | .014 | .014 | 62.068 |
| Variance: | 27.984 | 42.841 | 5.163 | 29.619 | 42.818 | 5.427 | 119.877 | • | 90.877 | • | .004 | .004 | 73195.912 |
| Coeff. of Variation: | .033 | .113 | .104 | .033 | .112 | .105 | .098 | • | .149 | • | .053 | .051 | .107 |
| Minimum: | 152.600 | 45.100 | 17.058 | 152.200 | 48.400 | 18.083 | 98 | • | 49 | • | 1.053 | 1.067 | 1999 |
| Maximum: | 172.200 | 70.500 | 25.461 | 172.800 | 75.300 | 27.195 | 137 | • | 82 | • | 1.274 | 1.273 | 3019 |
| Range: | 19.600 | 25.400 | 8.403 | 20.600 | 26.900 | 9.112 | 39.000 | • | 33.000 | • | .221 | .206 | 1020.000 |
| Count: | 19 | 19 | 19 | 19 | 19 | 19 | 0 | 19 | 0 | 19 | 19 | 19 | 19 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 20 | 1 | 20 | 1 | 1 | 1 | 1 |
| Sum: | 3092.100 | 1101.600 | 416.022 | 3092.500 | 1111.900 | 420.036 | 2130.000 | 0.000 | 1214.000 | 0.000 | 22.207 | 22.380 | 47968.000 |
| Sum of Squares: | 503718.570 | 64640.740 | 9202.119 | 503878.210 | 65840.290 | 9383.479 | 240942.0... | 0.000 | 79204.000 | 0.000 | 26.026 | 26.426 | 122419054.000 |

| | height1 | weight1 | BMI1 | height2 | weight2 | BMI2 | sbp_1 | sbp_2 | dbp_1 | dbp_2 | BMD total (g/cm2) | BMD total 2 | BMC tot (g) |
|----|---------|---------|--------|---------|---------|--------|-------|-------|-------|-------|-------------------|-------------|-------------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 162.600 | 45.100 | 17.058 | 163.900 | 48.400 | 18.083 | 108 | • | 77 | • | 1.053 | 1.067 | 1999 |
| 3 | 156.800 | 61.300 | 24.933 | 156.800 | 62.200 | 25.299 | 115 | • | 62 | • | 1.257 | 1.254 | 2433 |
| 4 | 166.000 | 65.000 | 23.588 | 166.000 | 64.900 | 23.552 | 99 | • | 52 | • | 1.172 | 1.172 | 2744 |
| 5 | 166.600 | 66.300 | 23.887 | 166.800 | 66.400 | 23.866 | 108 | • | 61 | • | 1.239 | 1.236 | 2958 |
| 6 | 162.600 | 53.500 | 20.235 | 161.800 | 54.200 | 20.703 | 109 | • | 74 | • | 1.100 | 1.103 | 2350 |
| 7 | 159.000 | 55.200 | 21.835 | 159.000 | 55.400 | 21.914 | 100 | • | 62 | • | 1.112 | 1.124 | 2281 |
| 8 | 165.200 | 53.800 | 19.713 | 165.200 | 53.600 | 19.640 | 106 | • | 55 | • | 1.078 | 1.083 | 2187 |
| 9 | 161.200 | 56.600 | 21.800 | 161.200 | 57.100 | 21.974 | 98 | • | 60 | • | 1.159 | 1.195 | 2503 |
| 10 | 163.000 | 55.400 | 20.851 | 163.000 | 57.400 | 21.604 | 107 | • | 53 | • | 1.208 | 1.230 | 2805 |
| 11 | 167.700 | 55.900 | 19.877 | 167.600 | 54.500 | 19.402 | 137 | • | 72 | • | 1.145 | 1.161 | 2444 |
| 12 | 172.000 | 57.600 | 19.470 | 172.000 | 59.000 | 19.943 | 122 | • | 74 | • | 1.146 | 1.137 | 2680 |
| 13 | 163.400 | 54.000 | 20.225 | 163.400 | 53.400 | 20.000 | 130 | • | 68 | • | 1.245 | 1.222 | 2528 |
| 14 | 158.400 | 55.300 | 22.040 | 158.400 | 53.800 | 21.442 | 109 | • | 65 | • | 1.159 | 1.187 | 2415 |
| 15 | 166.400 | 70.500 | 25.461 | 166.400 | 75.300 | 27.195 | 103 | • | 49 | • | 1.220 | 1.251 | 2884 |
| 16 | 157.000 | 51.700 | 20.974 | 157.200 | 54.200 | 21.933 | 110 | • | 56 | • | 1.116 | 1.119 | 2289 |
| 17 | 163.800 | 66.300 | 24.711 | 163.800 | 65.400 | 24.375 | 129 | • | 75 | • | 1.156 | 1.177 | 2638 |
| 18 | 152.600 | 50.900 | 21.858 | 152.200 | 51.800 | 22.361 | 107 | • | 56 | • | 1.274 | 1.273 | 2383 |
| 19 | 155.600 | 60.800 | 25.112 | 155.000 | 60.500 | 25.182 | 121 | • | 82 | • | 1.151 | 1.177 | 2428 |
| 20 | 172.200 | 66.400 | 22.392 | 172.800 | 64.400 | 21.567 | 112 | • | 61 | • | 1.217 | 1.212 | 3019 |

| | BMC lot 2 | BMC trunk | BMC trunk2 | BMC arms | BMC arms2 | BMC legs | BMC legs2 | BMD spine | BMD spine2 | BMD pelvis |
|----------------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Type: | Real | Integer | Integer | Integer | Integer | Integer | Integer | Real | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Format... | * | * | * | * | * | * | Continuous | Continuous | Continuous |
| Dec. Places: | 3 | . | . | . | . | . | . | 3 | 3 | 3 |
| Mean: | 2448.803 | 936.421 | 877.684 | 329.316 | 303.579 | 799.421 | 854.789 | 1.220 | 1.252 | 1.129 |
| Std. Deviation: | 643.297 | 362.775 | 111.753 | 114.385 | 35.620 | 158.707 | 113.427 | .111 | .113 | .093 |
| Std. Error: | 147.582 | 83.226 | 25.638 | 26.242 | 8.172 | 36.410 | 26.022 | .025 | .026 | .021 |
| Variance: | 413830.407 | 131606.035 | 12488.784 | 13084.006 | 1268.813 | 25187.813 | 12865.731 | .012 | .013 | .009 |
| Coeff. of Variation: | .263 | .387 | .127 | .347 | .117 | .199 | .133 | .091 | .090 | .082 |
| Minimum: | 2.264 | 602 | 645 | 248 | 241 | 314 | 713 | .930 | 1.091 | .952 |
| Maximum: | 2987.000 | 2350 | 1054 | 779 | 382 | 1032 | 1062 | 1.437 | 1.480 | 1.340 |
| Range: | 2984.736 | 1748.000 | 409.000 | 531.000 | 141.000 | 718.000 | 349.000 | .507 | .389 | .388 |
| Count: | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 46527.264 | 17792.000 | 16676.000 | 6257.000 | 5768.000 | 15189.000 | 16241.000 | 23.173 | 23.791 | 21.455 |
| Sum of Squares: | 124385068.000 | 19029712.000 | 14861060.000 | 2296041.000 | 1773882.000 | 12595787.000 | 14114219.000 | 28.484 | 30.019 | 24.383 |

| | BMC tot 2 | BMC trunk | BMC trunk2 | BMC arms | BMC arms2 | BMC legs | BMC legs2 | BMD spine | BMD spine2 | BMD pelvis |
|----|-----------|-----------|------------|----------|-----------|----------|-----------|-----------|------------|------------|
| 1 | . | . | . | . | . | . | . | . | . | . |
| 2 | 2051.000 | 602 | 645 | 248 | 241 | 713 | 722 | .930 | 1.091 | .952 |
| 3 | 2495.000 | 804 | 849 | 281 | 274 | 778 | 789 | 1.257 | 1.337 | 1.177 |
| 4 | 2789.000 | 915 | 975 | 332 | 325 | 992 | 993 | 1.175 | 1.124 | 1.098 |
| 5 | 2951.000 | 1030 | 993 | 336 | 336 | 1032 | 1055 | 1.324 | 1.388 | 1.189 |
| 6 | 2360.000 | 2350 | 771 | 305 | 310 | 788 | 827 | 1.157 | 1.228 | 1.018 |
| 7 | 2312.000 | 771 | 762 | 269 | 279 | 700 | 713 | 1.106 | 1.173 | 1.087 |
| 8 | 2.264 | 706 | 723 | 267 | 261 | 721 | 754 | 1.163 | 1.224 | .998 |
| 9 | 2504.000 | 861 | 875 | 333 | 289 | 761 | 795 | 1.255 | 1.149 | 1.205 |
| 10 | 2889.000 | 965 | 1054 | 379 | 371 | 905 | 922 | 1.235 | 1.348 | 1.252 |
| 11 | 2516.000 | 784 | 820 | 290 | 288 | 860 | 893 | 1.241 | 1.287 | 1.088 |
| 12 | 2738.000 | 907 | 956 | 300 | 296 | 953 | 963 | 1.162 | 1.185 | 1.087 |
| 13 | 2534.000 | 792 | 840 | 304 | 291 | 761 | 805 | 1.127 | 1.184 | 1.130 |
| 14 | 2485.000 | 862 | 882 | 282 | 315 | 776 | 785 | 1.231 | 1.323 | 1.188 |
| 15 | 2926.000 | 1037 | 1009 | 289 | 313 | 1029 | 1062 | 1.385 | 1.480 | 1.157 |
| 16 | 2337.000 | 781 | 790 | 334 | 331 | 761 | 736 | 1.189 | 1.156 | 1.090 |
| 17 | 2717.000 | 911 | 975 | 324 | 310 | 841 | 858 | 1.304 | 1.156 | 1.118 |
| 18 | 2431.000 | 826 | 865 | 251 | 264 | 743 | 756 | 1.437 | 1.469 | 1.340 |
| 19 | 2493.000 | 790 | 867 | 779 | 292 | 314 | 810 | 1.196 | 1.246 | 1.066 |
| 20 | 2997.000 | 1098 | 1025 | 354 | 382 | 761 | 1003 | 1.299 | 1.243 | 1.215 |

| | BMD pelvis2 | total ca++ | total ca++2 | Tis_Fa1 | Tis_Fa2 | Regn % fat | Regn % fat2 | F_mass1 | F_mass2 | FF_m1 | FF_m2 |
|----------------------|--------------------|--------------|--------------|--------------|--------------|--------------------|--------------------|-----------------|-----------------|-----------------|-----------------|
| Type: | Real | Integer | Real | Real | Real | Real | Real | Real | Real | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Format Fix... | . | . | Free Form... | Free Form... | Free Format Fix... | Free Format Fix... | Free Format ... | Free Format ... | Free Format ... | Free Format ... |
| Dec. Places: | 3 | . | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mean: | 959.421 | 975.737 | 27.874 | 27.684 | 26.679 | 26.458 | 15.089 | 15.584 | 39.648 | 40.041 | |
| Std. Deviation: | .099 | 102.769 | 99.466 | 6.321 | 6.121 | 6.089 | 5.898 | 5.134 | 4.904 | 3.886 | 3.872 |
| Std. Error: | .023 | 23.577 | 22.819 | 1.450 | 1.404 | 1.397 | 1.353 | 1.178 | 1.125 | .891 | .888 |
| Variance: | .010 | 10561.368 | 9893.427 | 39.951 | 37.470 | 37.077 | 34.786 | 26.361 | 24.048 | 15.100 | 14.994 |
| Coeff. of Variation: | .086 | .107 | .102 | .227 | .221 | .228 | .223 | .340 | .315 | .098 | .097 |
| Minimum: | .951 | 760 | 779 | 16.200 | 19.100 | 15.400 | 18.100 | 6.500 | 10.315 | 33.005 | 33.773 |
| Maximum: | 1.303 | 1147 | 1139 | 37.800 | 40.200 | 36.300 | 38.600 | 24.591 | 28.851 | 47.769 | 48.637 |
| Range: | .352 | 387.000 | 360.000 | 21.600 | 21.100 | 20.900 | 20.500 | 18.091 | 18.536 | 14.764 | 14.864 |
| Count: | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 21.731 | 18229.000 | 18539.000 | 529.600 | 526.000 | 506.900 | 502.700 | 286.696 | 296.101 | 753.315 | 760.772 |
| Sum of Squares: | 25.030 | 17679391.000 | 18267267.000 | 15481.020 | 15236.360 | 14190.950 | 13926.530 | 4800.532 | 5047.377 | 30139.354 | 30731.676 |

| | BMD pelvis2 | total ca++ | total ca++2 | Tis_Fa1 | Tis_Fa2 | Regn % fat | Regn % fat2 | F_mass1 | F_mass2 | FF_m1 | FF_m2 |
|----|-------------|------------|-------------|---------|---------|------------|-------------|---------|---------|--------|--------|
| 1 | . | * | * | * | * | * | * | * | * | * | * |
| 2 | .951 | 760 | 779 | 16,800 | 22,700 | 16,100 | 21,700 | 7,422 | 10,446 | 36,800 | 35,634 |
| 3 | 1.234 | 925 | 948 | 33,800 | 34,200 | 32,400 | 32,800 | 19,747 | 20,650 | 38,726 | 39,767 |
| 4 | 1.113 | 1,043 | 1,060 | 25,600 | 25,800 | 24,500 | 24,700 | 15,880 | 16,193 | 46,089 | 46,452 |
| 5 | 1.199 | 1,124 | 1,122 | 31,000 | 32,900 | 29,600 | 31,400 | 19,295 | 20,400 | 42,927 | 41,557 |
| 6 | 1,019 | 893 | 897 | 22,700 | 20,600 | 21,700 | 19,700 | 11,621 | 10,315 | 39,587 | 39,753 |
| 7 | 1,044 | 867 | 878 | 27,500 | 24,800 | 26,400 | 23,700 | 14,160 | 13,105 | 37,290 | 39,823 |
| 8 | .990 | 831 | 860 | 27,000 | 26,500 | 25,900 | 25,400 | 13,560 | 13,569 | 36,602 | 37,613 |
| 9 | 1,245 | 951 | 951 | 31,400 | 29,900 | 30,100 | 28,500 | 17,127 | 15,960 | 37,355 | 37,502 |
| 10 | 1,303 | 1,066 | 1,098 | 16,200 | 19,100 | 15,400 | 18,100 | 8,562 | 10,547 | 44,290 | 44,701 |
| 11 | 1,105 | 929 | 956 | 22,800 | 22,100 | 21,800 | 21,100 | 12,142 | 11,494 | 41,124 | 40,474 |
| 12 | 1,115 | 1,019 | 1,041 | 22,300 | 23,300 | 21,300 | 22,200 | 12,331 | 13,224 | 42,915 | 43,547 |
| 13 | 1,203 | 961 | 963 | 31,500 | 26,100 | 30,100 | 24,900 | 6,500 | 13,130 | 35,148 | 37,166 |
| 14 | 1,190 | 918 | 944 | 30,800 | 30,400 | 29,400 | 29,000 | 16,394 | 15,504 | 36,905 | 36,225 |
| 15 | 1,194 | 1,096 | 1,112 | 36,700 | 40,200 | 35,200 | 38,600 | 24,591 | 28,851 | 42,425 | 42,928 |
| 16 | 1,122 | 870 | 888 | 24,500 | 24,700 | 23,500 | 23,600 | 12,341 | 12,735 | 37,988 | 38,876 |
| 17 | 1,140 | 1,002 | 1,032 | 37,800 | 36,100 | 36,300 | 34,600 | 24,028 | 22,689 | 39,508 | 40,126 |
| 18 | 1,291 | 905 | 924 | 30,200 | 31,900 | 28,700 | 30,400 | 14,259 | 15,844 | 33,005 | 33,773 |
| 19 | 1,071 | 922 | 947 | 37,000 | 35,200 | 35,600 | 33,700 | 21,686 | 19,641 | 36,862 | 36,218 |
| 20 | 1,202 | 1,147 | 1,139 | 24,000 | 19,500 | 22,900 | 18,600 | 15,050 | 11,804 | 47,769 | 48,637 |

| | LTM trunk | LTM trunk:2 | LTM arms | LTM arms2 | LTM legs | LTM legs2 | Appen_1 | Appen_2 | FM_tr | FM_tr2 | FM_arms | FM arms2 |
|----------------------|-----------------|-------------------|-----------------|-------------------|-------------------|-----------------|-----------------|----------------|---------------|--------------|----------------|----------------|
| Type: | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Ent... | User Ent... | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuou... | Continuou... | Continuous | Continuous |
| Format: | Free Format ... | Free Format Fi... | Free Format ... | Free Format Fi... | Free Format Fi... | Free Format ... | Free Format ... | Free Format... | Free Forma... | Free For... | Free Format... | Free Format... |
| Dec. Places: | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mean: | 19.302 | 19.559 | 4.162 | 4.109 | 13.519 | 13.850 | 17.681 | 17.959 | 6.589 | 6.535 | 1.617 | 1.428 |
| Std. Deviation: | 1.631 | 1.553 | .559 | .553 | 1.849 | 1.998 | 2.251 | 2.489 | 2.411 | 2.521 | .976 | .692 |
| Std. Error: | .374 | .356 | .128 | .127 | .424 | .458 | .516 | .571 | .553 | .578 | .224 | .159 |
| Variance: | 2.661 | 2.413 | .313 | .306 | 3.419 | 3.993 | 5.066 | 6.196 | 5.815 | 6.356 | .952 | .479 |
| Coeff. of Variation: | .085 | .079 | .134 | .135 | .137 | .144 | .127 | .139 | .366 | .386 | .603 | .485 |
| Minimum: | 16.548 | 17.362 | 3.150 | 3.359 | 10.729 | 10.709 | 13.879 | 14.135 | 1.984 | 3.454 | .539 | .650 |
| Maximum: | 22.959 | 23.234 | 4.978 | 5.367 | 16.970 | 18.678 | 21.869 | 24.045 | 11.304 | 12.451 | 4.607 | 3.583 |
| Range: | 6.411 | 5.872 | 1.828 | 2.008 | 6.241 | 7.969 | 7.990 | 9.910 | 9.320 | 8.997 | 4.068 | 2.933 |
| Count: | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 366.739 | 371.617 | 79.070 | 78.071 | 256.862 | 263.144 | 335.932 | 341.215 | 125.196 | 124.173 | 30.716 | 27.127 |
| Sum of Squares: | 7126.722 | 7311.806 | 334.682 | 326.298 | 3534.075 | 3716.344 | 6030.676 | 6239.298 | 929.622 | 925.930 | 66.786 | 47.356 |

| | LTM trunk | LTM trunk2 | LTM arms | LTM arms2 | LTM legs | LTM legs2 | Apnen_1 | Apnen_2 | FM_tr | FM_tr2 | FM_arms | FM_arms2 |
|----|-----------|------------|----------|-----------|----------|-----------|---------|---------|--------|--------|---------|----------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 17.614 | 17.699 | 3.376 | 3.359 | 13.017 | 12.054 | 16.393 | 15.413 | 1.984 | 3.454 | .539 | .650 |
| 3 | 19.562 | 20.753 | 3.809 | 3.615 | 12.737 | 12.625 | 16.546 | 16.240 | 9.836 | 11.018 | 1.982 | 1.871 |
| 4 | 21.471 | 23.234 | 4.872 | 4.699 | 16.669 | 15.930 | 21.541 | 20.629 | 6.182 | 6.937 | 1.445 | 1.390 |
| 5 | 20.865 | 19.627 | 4.237 | 4.084 | 15.463 | 15.569 | 19.700 | 19.653 | 8.582 | 8.633 | 1.611 | 1.643 |
| 6 | 19.741 | 18.618 | 4.557 | 4.371 | 12.727 | 14.271 | 17.284 | 18.642 | 4.444 | 3.511 | .948 | .873 |
| 7 | 18.984 | 19.608 | 3.701 | 4.082 | 11.748 | 13.101 | 15.449 | 17.183 | 6.491 | 5.593 | 1.235 | 1.147 |
| 8 | 18.301 | 18.358 | 3.723 | 3.608 | 11.884 | 12.596 | 15.607 | 16.204 | 5.600 | 5.619 | 1.155 | 1.168 |
| 9 | 18.127 | 18.026 | 4.282 | 3.665 | 12.339 | 13.305 | 16.621 | 16.970 | 7.227 | 6.498 | 1.615 | 1.416 |
| 10 | 20.904 | 21.264 | 4.953 | 4.964 | 15.239 | 15.708 | 20.192 | 20.672 | 3.077 | 3.986 | .794 | .855 |
| 11 | 19.451 | 19.293 | 4.043 | 3.870 | 14.527 | 14.293 | 18.570 | 18.163 | 5.256 | 4.743 | .941 | .973 |
| 12 | 20.257 | 20.717 | 4.607 | 4.412 | 15.610 | 16.080 | 20.217 | 20.492 | 4.231 | 4.894 | 4.607 | 1.102 |
| 13 | 17.207 | 19.963 | 3.931 | 3.621 | 11.221 | 11.644 | 15.152 | 15.265 | 6.500 | 5.423 | 1.385 | 1.063 |
| 14 | 18.482 | 18.059 | 3.371 | 3.718 | 12.703 | 12.165 | 16.074 | 15.883 | 6.945 | 6.638 | 1.140 | 1.219 |
| 15 | 20.946 | 20.175 | 4.033 | 4.544 | 15.214 | 15.942 | 19.247 | 20.486 | 11.304 | 12.451 | 1.972 | 3.583 |
| 16 | 18.300 | 19.121 | 4.332 | 4.266 | 12.720 | 12.836 | 17.052 | 17.102 | 5.751 | 5.462 | 1.073 | 1.307 |
| 17 | 19.095 | 20.112 | 4.978 | 4.575 | 13.003 | 13.161 | 17.981 | 17.736 | 10.029 | 9.539 | 3.356 | 2.473 |
| 18 | 16.548 | 17.362 | 3.150 | 3.426 | 10.729 | 10.709 | 13.879 | 14.135 | 6.441 | 7.153 | 1.298 | 1.520 |
| 19 | 17.925 | 17.841 | 4.216 | 3.825 | 12.342 | 12.477 | 16.558 | 16.302 | 9.377 | 8.555 | 2.524 | 2.047 |
| 20 | 22.959 | 21.787 | 4.899 | 5.367 | 16.970 | 18.678 | 21.869 | 24.045 | 5.939 | 4.066 | 1.096 | .827 |

| | FM legs | FM legs2 | FM_per1 | FM_per2 | V02_I1 | V02_I2 | V02_kg1 | V02_kg2 | max hr | max hr2 | max RQ | max RQ2 | LTA |
|----------------------|--------------|----------------|----------------|----------------|--------------|--------------|---------------|---------------|--------------|--------------|--------------|----------------|------------|
| Type: | Real | Real | Real | Real | Real | Real | Real | Real | Integer | Integer | Real | Real | 'Real' |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User ... |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Form... | Free Format... | Free Format... | Free Format... | Free For... | Free For... | Free Forma... | Free Forma... | * | * | Free Form... | Free Format... | Free ... |
| Dec. Places: | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | * | * | 3 | 3 | 3 |
| Mean: | 6.307 | 6.359 | 7.924 | 7.787 | 2.113 | 2.537 | 38.882 | 43.400 | 190.053 | 188.737 | 1.155 | 1.163 | 321.078 |
| Std. Deviation: | 1.625 | 1.696 | 2.269 | 2.347 | .515 | .513 | 6.274 | 6.733 | 7.176 | 9.808 | .053 | .048 | 325.067 |
| Std. Error: | .373 | .389 | .520 | .539 | .118 | .121 | 1.439 | 1.545 | 1.646 | 2.250 | .012 | .011 | 83.932 |
| Variance: | 2.640 | 2.876 | 5.147 | 5.510 | .265 | .263 | 39.366 | 45.335 | 51.497 | 96.205 | .003 | .002 | 1.057... |
| Coeff. of Variation: | .258 | .267 | .286 | .301 | .244 | .202 | .161 | .155 | .038 | .052 | .041 | .041 | 1.012... |
| Minimum: | 3.702 | 4.612 | 4.487 | 5.467 | 1.573 | 1.858 | 29.900 | 34.300 | 175 | 170 | 1.060 | 1.050 | 0.000 |
| Maximum: | 9.817 | 11.156 | 12.328 | 14.739 | 3.466 | 3.793 | 52.200 | 58.900 | 201 | 201 | 1.270 | 1.230 | 1300... |
| Range: | 6.115 | 6.544 | 7.841 | 9.272 | 1.893 | 1.935 | 22.300 | 24.600 | 26.000 | 31.000 | .210 | .180 | 1300... |
| Count: | 19 | 19 | 19 | 19 | 18 | 19 | 19 | 19 | 19 | 19 | 18 | 18 | 15 |
| Missing Cells: | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 5 |
| Sum: | 119.841 | 120.829 | 150.557 | 147.956 | 40.156 | 45.666 | 738.759 | 824.594 | 3611.000 | 3586.000 | 21.940 | 20.930 | 4816... |
| Sum of Squares: | 803.400 | 820.173 | 1285.673 | 1251.345 | 89.639 | 120.327 | 29433.048 | 36603.121 | 687207.0... | 678542.000 | 25.385 | 24.376 | 3.026... |

| | FM_legs | FM_legs2 | FM_per1 | FM_per2 | VC02_I1 | VO2_I2 | VO2_kg1 | VO2_kg2 | max hr | max hr2 | max RQ | max RQ2 | LTA |
|----|---------|----------|---------|---------|---------|--------|---------|---------|--------|---------|--------|---------|---------|
| 1 | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 2 | 3.948 | 5.076 | 4.487 | 5.726 | 1.651 | 2.101 | 36.800 | 43.400 | 187 | 201 | 1.130 | 1.140* | 74.300 |
| 3 | 6.598 | 6.442 | 8.580 | 8.313 | 1.833 | 2.133 | 29.900 | 34.300 | 183 | 170 | 1.150 | 1.160 | 215.000 |
| 4 | 6.742 | 6.581 | 8.187 | 7.971 | 1.800 | 3.135 | 44.338 | 48.300 | 188 | 179 | 1.140 | 1.200 | * |
| 5 | 7.861 | 8.703 | 9.472 | 10.346 | 2.433 | 2.756 | 36.700 | 41.500 | 175 | 173 | 1.160 | 1.160 | 1300 |
| 6 | 5.124 | 4.875 | 6.072 | 5.748 | 1.899 | 1.924 | 35.500 | 35.500 | 197 | 197 | 1.110 | 1.110 | * |
| 7 | 5.299 | 5.249 | 6.534 | 6.396 | 2.015 | 2.764 | 36.500 | 49.900 | 196 | 196 | 1.170 | 1.170 | 90.000 |
| 8 | 5.706 | 5.553 | 6.861 | 6.721 | 1.762 | 2.085 | 32.750 | 38.900 | 193 | 183 | 1.060 | 1.130 | 0.000 |
| 9 | 6.823 | 6.684 | 8.438 | 8.100 | 1.800 | 2.918 | 42.509 | 51.100 | 197 | 197 | 1.130 | 1.110 | 478.000 |
| 10 | 3.702 | 4.612 | 4.496 | 5.467 | 2.554 | 2.910 | 46.100 | 50.700 | 201 | 200 | 1.150 | 1.110 | * |
| 11 | 5.042 | 4.814 | 5.983 | 5.787 | 2.320 | 2.185 | 41.500 | 40.100 | 194 | 182 | 1.230 | 1.230 | 236.090 |
| 12 | 5.855 | 5.976 | 10.462 | 7.078 | 2.678 | 2.956 | 46.500 | 50.100 | 187 | 187 | 1.120 | 1.180 | 281.000 |
| 13 | 6.725 | 5.434 | 8.110 | 6.497 | 1.831 | 1.858 | 33.900 | 34.800 | 193 | 198 | 1.220 | 1.200 | 724.000 |
| 14 | 6.893 | 6.544 | 8.033 | 7.763 | 1.659 | * | 30.000 | 45.000 | 177 | 189 | 1.210 | * | 64.970 |
| 15 | 9.817 | 11.156 | 11.789 | 14.739 | 3.017 | 2.794 | 42.800 | 37.100 | 184 | 179 | 1.180 | 1.230 | 204.800 |
| 16 | 4.550 | 4.942 | 5.623 | 6.249 | 2.264 | 2.369 | 43.800 | 43.700 | 200 | 200 | 1.120 | 1.190 | * |
| 17 | 8.972 | 8.904 | 12.328 | 11.377 | 1.800 | 2.245 | 35.143 | 37.294 | 186 | 188 | 1.150 | 1.050 | 223.000 |
| 18 | 5.374 | 5.997 | 6.672 | 7.517 | 1.573 | 2.036 | 30.900 | 39.300 | 194 | 198 | 1.270 | 1.220 | 287.010 |
| 19 | 8.216 | 7.673 | 10.740 | 9.720 | 1.800 | 2.704 | 41.118 | 44.700 | 191 | 190 | 1.070 | 1.160 | 261.000 |
| 20 | 6.594 | 5.614 | 7.690 | 6.441 | 3.466 | 3.793 | 52.200 | 58.900 | 188 | 179 | 1.160 | 1.180 | 377.000 |

| | LTA2 | VO2_1 | VO2_2 | VCO2_1 | VCO2_2 | RMR_1 | RMR_2 | RQ | RQ2 | M_abs1 | M_corr1 | M_abs2 | M_corr2 | M_FFM1 |
|----------------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|
| Type: | Real | Integer | Integer | Integer | Integer | Integer | Integer | Real | Real | Real | Real | Real | Real | Real |
| Source: | User Ent... | User Entered | User Enter... | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Fo... | . | . | . | . | . | . | Free ... | Free Form... | Free Form... |
| Dec. Places: | 3 | . | . | . | . | . | . | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mean: | 355.489 | 198.737 | 200.947 | 168.421 | 172.211 | 1362.895 | 1382.105 | .851 | 5.289 | 406.474 | 404.663 | 437.497 | 447.539 | 10.228 |
| Std. Deviation: | 147.241 | 18.399 | 20.630 | 11.848 | 16.209 | 119.899 | 135.383 | .037 | 19.303 | 113.342 | 114.815 | 149.870 | 152.305 | 2.840 |
| Std. Error: | 35.711 | 4.221 | 4.733 | 2.718 | 3.719 | 27.507 | 31.059 | .008 | 4.428 | 26.002 | 26.340 | 35.325 | 35.899 | .652 |
| Variance: | 21679.... | 338.538 | 425.608 | 140.368 | 262.731 | 14375.877 | 18328.655 | .001 | 372.608 | 12846.454 | 13182.424 | 22461.123 | 23196.894 | 8.068 |
| Coeff. of Variation: | .414 | .093 | .103 | .070 | .094 | .088 | .098 | .043 | 3.650 | .279 | .284 | .343 | .340 | .278 |
| Minimum: | 142.600 | 170 | 159 | 149 | 146 | 1170 | 1160 | .770 | .780 | 215.980 | 199.541 | 194.000 | 199.776 | 4.852 |
| Maximum: | 727.000 | 235 | 246 | 193 | 221 | 1580 | 1720 | .910 | .85.000 | 615.700 | 626.990 | 670.290 | 690.645 | 16.505 |
| Range: | 584.400 | 65.000 | 87.000 | 44.000 | 75.000 | 410.000 | 560.000 | .140 | 84.220 | 399.720 | 427.449 | 476.290 | 490.869 | 11.653 |
| Count: | 17 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 18 | 18 | 19 |
| Missing Cells: | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 |
| Sum: | 6043.320 | 3776.000 | 3818.000 | 3200.000 | 3272.000 | 25895.000 | 26260.000 | 16.170 | 100.490 | 7722.997 | 7668.589 | 7874.940 | 8055.696 | 194.341 |
| Sum of Squares: | 2.495E6 | 756524.0... | 774878.0... | 541474.000 | 568202.000 | 35550925 | 36624000 | 13.786 | 7238.4... | 3370429.995 | 3348568.246 | 3827099.085 | 3999582.678 | 2133.042 |

| | LTA2 | VO2_1 | VO2_2 | VCO2_1 | VCO2_2 | RMR_1 | RMR_2 | RQ | RQ2 | M_abs1 | M_corr1 | M_abs2 | M_corr2 | M_FFM1 |
|----|---------|-------|-------|--------|--------|-------|-------|------|---------|---------|---------|---------|---------|--------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 517.900 | 172 | 193 | 154 | 162 | 1190 | 1320 | .900 | .840 | 282.830 | 261.712 | 204.000 | 210.082 | 7.112 |
| 3 | 508.000 | 203 | 198 | 174 | 171 | 1400 | 1370 | .850 | .860 | 326.540 | 332.336 | 407.950 | 420.275 | 8.582 |
| 4 | 281.000 | 235 | 231 | 181 | 188 | 1580 | 1570 | .770 | .820 | 451.300 | 459.467 | 436.700 | 449.905 | 9.969 |
| 5 | 378.300 | 213 | 213 | 176 | 175 | 1450 | 1450 | .830 | .820 | 309.400 | 314.871 | 454.280 | 468.023 | 7.335 |
| 6 | 250.600 | 202 | 197 | 165 | 164 | 1370 | 1350 | .820 | .830 | 279.420 | 284.321 | 345.290 | 355.697 | 7.182 |
| 7 | 142.600 | 177 | 211 | 157 | 182 | 1230 | 1450 | .880 | .860 | 246.140 | 250.409 | 287.110 | 295.736 | 6.715 |
| 8 | 216.000 | 205 | 159 | 170 | 178 | 1400 | 1160 | .830 | 1.130 | 408.920 | 419.593 | 558.710 | 518.280 | 11.464 |
| 9 | • | 195 | 195 | 165 | 171 | 1340 | 1350 | .850 | .870 | 482.000 | 490.750 | 550.710 | 567.405 | 13.137 |
| 10 | • | 199 | 193 | 167 | 159 | 1365 | 1320 | .840 | .830 | 489.000 | 497.883 | 550.260 | 566.941 | 11.241 |
| 11 | 453.000 | 184 | 196 | 164 | 176 | 1270 | 1360 | .890 | .890 | 215.980 | 199.541 | 194.000 | 199.776 | 4.852 |
| 12 | 366.000 | 192 | 220 | 159 | 172 | 1310 | 1480 | .830 | .780 | 514.270 | 523.633 | 279.420 | 287.811 | 12.202 |
| 13 | 727.000 | 181 | 169 | 151 | 146 | 1230 | 1160 | .840 | .870 | 303.400 | 308.757 | 406.000 | 418.265 | 8.764 |
| 14 | 343.000 | 187 | 211 | 164 | 172 | 1290 | 1440 | .880 | .810 | 479.970 | 445.052 | 293.000 | 301.806 | 12.059 |
| 15 | 276.600 | 213 | 216 | 193 | 185 | 1490 | 1480 | .910 | .860 | 574.857 | 533.297 | • | 12.570 | • |
| 16 | 367.000 | 210 | 194 | 176 | 158 | 1440 | 1320 | .840 | .810 | 615.700 | 626.990 | 660.140 | 680.184 | 16.505 |
| 17 | 340.000 | 227 | 246 | 186 | 221 | 1550 | 1720 | .820 | .900 | 444.570 | 452.609 | 670.290 | 690.645 | 11.456 |
| 18 | 260.320 | 170 | 176 | 149 | 150 | 1170 | 1210 | .880 | .85.000 | 380.560 | 352.601 | 472.000 | 486.285 | 10.683 |
| 19 | 154.000 | 189 | 192 | 169 | 166 | 1310 | 1320 | .900 | .870 | 463.430 | 471.827 | 459.680 | 473.588 | 12.800 |
| 20 | 462.000 | 222 | 208 | 180 | 176 | 1510 | 1430 | .810 | .840 | 454.710 | 462.941 | 645.400 | 664.993 | 9.691 |

| | M_FFM2 | Fasting Ins 1 | Fasting Ins 2 | Ins_1 | Ins_2 | Glu - 10' 1 | Glu 0' 1 | Glu 30' 1 | Glu 60' 1 | Glu 90' 1 | Glu 120' 1 | Ave Glu 1 |
|----------------------|--------------|-------------------|-------------------|------------|------------|--------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Type: | Real | Real | Real | Real | Real | Integer | Integer | Real | Real | Real | Real | Real |
| Source: | User Entered | User Entered | User Entered | User En... | User En... | User Entered | User Enter... | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continu... | Continu... | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Form... | Free Format Fixed | Free Format Fixed | Free Fo... | Free Fo... | * | * | Free Forma... | Free Forma... | Free Forma... | Free Forma... | Free Format... |
| Dec. Places: | 3 | 3 | 3 | 3 | 3 | . | . | 3 | 3 | 3 | 3 | 3 |
| Mean: | 11.242 | 13.336 | 7.583 | 69.263 | 74.825 | 76.111 | 75.611 | 75.679 | 76.532 | 76.488 | 76.347 | 76.303 |
| Std. Deviation: | 3.746 | 18.091 | 2.631 | 11.240 | 15.575 | 4.813 | 4.104 | 4.614 | 4.516 | 4.394 | 3.980 | 3.621 |
| Std. Error: | .883 | 5.455 | .877 | 2.579 | 3.671 | 1.134 | .967 | 1.059 | 1.036 | 1.008 | .913 | .831 |
| Variance: | 14.036 | 327.296 | 6.921 | 126.333 | 242.583 | 23.163 | 16.840 | 21.292 | 20.393 | 19.304 | 15.840 | 13.113 |
| Coeff. of Variation: | .333 | 1.357 | .347 | .162 | .208 | .063 | .054 | .061 | .059 | .057 | .052 | .047 |
| Minimum: | 4.936 | 5.700 | 5.250 | 47.230 | 52.600 | 69 | 67 | 67.660 | 68.500 | 70.000 | 71.000 | 70.280 |
| Maximum: | 17.496 | 67.450 | 13.200 | 87.500 | 122.000 | 87 | 83 | 83.500 | 85.660 | 87.160 | 84.160 | 82.740 |
| Range: | 12.560 | 61.750 | 7.950 | 40.270 | 69.400 | 18.000 | 16.000 | 15.840 | 17.160 | 17.160 | 13.160 | 12.460 |
| Count: | 18 | 11 | 9 | 19 | 18 | 18 | 18 | 19 | 19 | 19 | 19 | 19 |
| Missing Cells: | 2 | 9 | 11 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 202.364 | 146.700 | 68.250 | 1315.999 | 1346.855 | 1370.000 | 1361.000 | 1437.910 | 1454.110 | 1453.270 | 1450.600 | 1449.750 |
| Sum Of Squares: | 2513.666 | 5229.400 | 572.928 | 93424.1... | 104902.... | 104666.000 | 103193.000 | 109203.524 | 111653.168 | 111505.034 | 111034.620 | 110855.774 |

| | M_FFM2 | Fasting Ins 1 | Fasting Ins 2 | Ins_1 | Ins_2 | Glu - 10' 1 | Glu 0' 1 | Glu 30' 1 | Glu 60' 1 | Glu 90' 1 | Glu 120' 1 | Ave Glu 1 |
|----|--------|---------------|---------------|--------|---------|-------------|----------|-----------|-----------|-----------|------------|-----------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 5.896 | • | • | 59.333 | 66.366 | 69 | 71 | 75.330 | 78.000 | 72.830 | 71.660 | 75.450 |
| 3 | 10.568 | 8.250 | • | 57.830 | 74.300 | 87 | 83 | 76.160 | 83.500 | 87.160 | 84.160 | 82.740 |
| 4 | 9.685 | • | 5.600 | 78.000 | 71.000 | 75 | 72 | 75.160 | 71.000 | 78.500 | 71.000 | 73.910 |
| 5 | 11.262 | 7.700 | 6.600 | 66.230 | 81.270 | 75 | 76 | 83.500 | 76.660 | 74.160 | 78.660 | 78.240 |
| 6 | 8.948 | • | 7.000 | 66.200 | 68.700 | • | 70 | 78.660 | 77.000 | 76.830 | 81.330 | 78.450 |
| 7 | 7.426 | • | 47.230 | 54.600 | 78 | 78 | 75.000 | 85.660 | 79.500 | 79.830 | 79.980 | 79.980 |
| 8 | 13.779 | 8.250 | 9.850 | 65.460 | 77.460 | 69 | 67 | 70.160 | 72.160 | 76.000 | 71.830 | 72.530 |
| 9 | 15.130 | 7.100 | • | 64.930 | 86.700 | 72 | 74 | 72.660 | 73.660 | 74.160 | 74.500 | 73.740 |
| 10 | 12.683 | • | • | 53.860 | 52.600 | 70 | • | 67.660 | 68.500 | 72.830 | 72.660 | 70.280 |
| 11 | 4.936 | 9.000 | 9.000 | 66.933 | 71.533 | 78 | 78 | 80.160 | 83.500 | 83.660 | 80.000 | 81.830 |
| 12 | 6.609 | 5.900 | 5.250 | 84.930 | 76.970 | 80 | 79 | 81.500 | 78.000 | 77.500 | 82.330 | 79.830 |
| 13 | 11.254 | 5.700 | 5.600 | 73.000 | 122.000 | 81 | 80 | 82.660 | 81.000 | 82.830 | 76.660 | 80.780 |
| 14 | 8.331 | 14.000 | 13.200 | 82.933 | 57.066 | 80 | 79 | 74.330 | 77.330 | 73.500 | 76.000 | 75.290 |
| 15 | • | • | 73.760 | • | 73.760 | 71 | 73 | 73.660 | 72.330 | 74.160 | 75.160 | 73.820 |
| 16 | 17.496 | 67.450 | • | 70.000 | 80.000 | 79 | 77 | 77.660 | 74.330 | 74.660 | 77.500 | 76.030 |
| 17 | 17.212 | • | • | 70.170 | 89.730 | 76 | 74 | 70.830 | 77.660 | 75.160 | 74.500 | 74.530 |
| 18 | 14.399 | 7.250 | • | 87.500 | 77.460 | 78 | 79 | 77.000 | 73.330 | 71.500 | 71.160 | 73.240 |
| 19 | 13.076 | 6.100 | 6.150 | 60.700 | 65.100 | 73 | 73 | 67.660 | 74.330 | 70.000 | 73.500 | 71.370 |
| 20 | 13.673 | • | • | 87.000 | 74.000 | 79 | 78 | 78.160 | 76.160 | 78.330 | 78.160 | 77.700 |

| | Glu_10' 2 | Glu_0' 2 | Glu_30' 2 | Glu_60' 2 | Glu_90' 2 | Glu_120' 2 | Ave_Glu_2 | Chol_1 | Trig_1 | HDL_1 | LDL_1 | Ch_HDL1 | ins_0 | |
|----------------------|--------------|--------------|---------------|---------------|---------------|---------------|----------------|--------------|--------------|--------------|--------------|--------------|-----------------|--|
| Type: | Integer | Real | Real | Real | Real | Real | Real | Integer | Integer | Integer | Integer | Real | 'Real | |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | |
| Format: | . | • | Free Forma... | Free Forma... | Free Forma... | Free Forma... | Free Format... | • | • | • | • | • | Free Format ... | |
| Dec. Places: | . | . | 3 | 3 | 3 | 3 | 3 | . | . | . | . | 3 | 3 | |
| Mean: | 76.789 | 76.211 | 75.234 | 78.312 | 90.703 | 92.755 | 84.735 | 191.316 | 96.211 | 58.789 | 113.316 | 3.503 | 7.413 | |
| Std. Deviation: | 4.417 | 3.735 | 5.495 | 4.053 | 50.522 | 61.755 | 28.461 | 27.029 | 30.983 | 19.269 | 23.898 | .939 | 2.336 | |
| Std. Error: | 1.013 | .857 | 1.261 | .930 | 11.591 | 14.556 | 6.708 | 6.201 | 7.108 | 4.421 | 5.483 | .216 | .536 | |
| Variance: | 19.509 | 13.953 | 30.198 | 16.428 | 2552.516 | 3813.658 | 810.038 | 730.561 | 959.953 | 371.287 | 571.117 | .883 | 5.456 | |
| Coeff. of Variation: | .058 | .049 | .073 | .052 | .557 | .666 | .336 | .141 | .322 | .328 | .211 | .268 | .315 | |
| Minimum: | 66 | 70 | 65.330 | 70.160 | 67.250 | 68.660 | 73.620 | 152 | 38 | 33 | 79 | 2.072 | 5.000 | |
| Maximum: | 83 | 83 | 86.160 | 85.660 | 298.500 | 339.660 | 198.120 | 245 | 153 | 111 | 178 | 5.200 | 13.800 | |
| Range: | 17.000 | 13.000 | 20.830 | 15.500 | 231.250 | 271.000 | 124.500 | 93.000 | 115.000 | 78.000 | 99.000 | 3.128 | 8.800 | |
| Count: | 19 | 19 | 19 | 19 | 18 | 18 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | |
| Missing Cells: | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| Sum: | 1459.000 | 1448.000 | 1429.440 | 1487.920 | 1723.360 | 1669.590 | 1525.230 | 3635.000 | 1828.000 | 1117.000 | 2153.000 | 66.558 | 140.850 | |
| Sum of Squares: | 112387.000 | 110604.000 | 108085.597 | 116817.074 | 20259.481 | 219695.005 | 143011.007 | 708583.000 | 193152.0... | 254249.0... | 249.042 | 1142.343 | | |

| | Glu -10' 2 | Glu 0' 2 | Glu 30' 2 | Glu 60' 2 | Glu 90' 2 | Glu 120' 2 | Ave Glu 2 | Chol_1 | Trig_1 | HDL_1 | LDL_1 | Ch_HDL1 | ins_0 |
|----|------------|----------|-----------|-----------|-----------|------------|-----------|--------|--------|-------|-------|---------|--------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 71 | 70 | 74.000 | 80.330 | 298.500 | 339.660 | 198.120 | 178 | 66 | 61 | 104 | 2.918 | 6.000 |
| 3 | 83 | 86.160 | 84.000 | 85.500 | 78.000 | 83.410 | 173 | 136 | 67 | 79 | 2.582 | 8.600 | |
| 4 | 73 | 74 | 71.330 | 80.500 | 76.500 | 73.160 | 75.370 | 158 | 101 | 36 | 102 | 4.400 | 5.000 |
| 5 | 74 | 74 | 79.330 | 77.830 | 78.160 | 79.660 | 78.740 | 230 | 153 | 111 | 88 | 2.072 | 10.050 |
| 6 | 74 | 73 | 73.330 | 77.160 | 75.330 | 68.660 | 73.620 | 196 | 87 | 77 | 102 | 2.545 | 10.000 |
| 7 | 80 | 77 | 76.660 | 76.830 | 82.830 | 77.830 | 78.530 | 177 | 71 | 52 | 111 | 3.404 | 5.000 |
| 8 | 75 | 73 | 74.000 | 76.160 | 77.000 | 78.000 | 76.040 | 199 | 60 | 60 | 127 | 3.317 | 6.100 |
| 9 | 76 | 74 | 69.830 | 76.830 | 77.330 | 79.830 | 75.950 | 194 | 116 | 37 | 134 | 5.200 | 7.100 |
| 10 | 66 | 76 | 77.500 | 74.160 | 76.330 | 79.160 | 76.780 | 166 | 61 | 59 | 95 | 2.814 | 5.000 |
| 11 | 75 | 72 | 78.000 | 77.160 | 81.160 | 79.330 | 78.910 | 228 | 95 | 64 | 145 | 3.563 | 8.100 |
| 12 | 78 | 74 | 80.830 | 83.160 | 76.660 | 74.500 | 78.780 | 245 | 73 | 52 | 178 | 4.712 | 7.800 |
| 13 | 79 | 81 | 81.000 | 77.660 | 88.160 | 87.500 | 83.580 | 152 | 119 | 35 | 93 | 4.300 | 9.000 |
| 14 | 82 | 81 | 82.160 | 85.660 | 83.330 | 83.160 | 83.570 | 187 | 85 | 65 | 105 | 2.900 | 13.800 |
| 15 | 76 | 72 | 70.660 | 70.160 | 67.250 | • | • | 204 | 123 | 82 | 97 | 2.500 | 7.900 |
| 16 | 81 | 80 | 65.500 | 73.500 | 79.000 | 81.660 | 74.910 | 213 | 101 | 47 | 146 | 4.500 | 5.000 |
| 17 | 78 | 80 | 65.330 | 76.830 | 80.160 | 77.830 | 75.030 | 222 | 132 | 74 | 122 | 3.000 | 6.200 |
| 18 | 82 | 79 | 77.660 | 78.160 | 79.500 | 80.830 | 79.030 | 188 | 82 | 62 | 110 | 3.032 | 9.100 |
| 19 | 82 | 79 | 73.000 | 85.500 | 83.500 | 76.160 | 79.540 | 168 | 129 | 33 | 109 | 5.100 | 6.100 |
| 20 | 74 | 76 | 73.160 | 76.330 | 77.160 | 74.660 | 75.320 | 157 | 38 | 43 | 106 | 3.700 | 5.000 |

| | ins_120 | glu_0 | glu_120 | L2sc_1 | L2sc_2 | L2vis_1 | L2vis_2 | L4sc_1 | L4sc_2 | L4vis_1 | L4vis_2 | RTatt_1 | RTatt_2 | |
|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|--|
| Type: | Real | Integer | Integer | Integer | Integer | Integer | Integer | Long Inte... | Long Inte... | Integer | Integer | Real | Real | |
| Source: | User Entered | User Enter... | |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | |
| Format: | Free Form... | * | * | * | * | * | * | * | * | * | * | Free Form... | Free Form... | |
| Dec. Places: | 3 | * | * | * | * | * | * | * | * | * | * | 3 | 3 | |
| Mean: | 38.089 | 78.368 | 91.053 | 10065.769 | 9581.222 | 3757.692 | 3721.222 | 18480.118 | 19027.600 | 4040.118 | 4054.133 | 49.875 | 51.668 | |
| Std. Deviation: | 18.160 | 4.669 | 16.962 | 5807.974 | 5357.222 | 2043.683 | 1864.798 | 8089.867 | 7618.254 | 1055.460 | 1217.486 | 2.583 | 2.056 | |
| Std. Error: | 4.166 | 1.071 | 3.891 | 1610.842 | 1262.709 | 566.816 | 439.537 | 1962.081 | 1967.025 | 255.987 | 314.354 | .646 | .472 | |
| Variance: | 329.779 | 21.801 | 287.719 | 3.373E7 | 2.87E7 | 4176641.7... | 3477471.4... | 65445955.... | 5.804E7 | 1113996.1... | 1482273.2... | 6.671 | 4.229 | |
| Coeff. of Variation: | .477 | .060 | .186 | .577 | .559 | .544 | .501 | .438 | .400 | .261 | .300 | .052 | .040 | |
| Minimum: | 17.200 | 71 | 68 | 2235 | 2326 | 1236 | 1636 | 7264 | 8053 | 2294 | 2478 | 44.400 | 46.800 | |
| Maximum: | 71.000 | 87 | 133 | 19509 | 20461 | 8590 | 9454 | 34578 | 34305 | 6173 | 7259 | 53.500 | 55.100 | |
| Range: | 53.800 | 16.000 | 65.000 | 17274.000 | 18135.000 | 7354.000 | 7818.000 | 27314.000 | 26252.000 | 3879.000 | 4781.000 | 9.100 | 8.300 | |
| Count: | 19 | 19 | 13 | 18 | 13 | 18 | 17 | 15 | 17 | 15 | 16 | 19 | | |
| Missing Cells: | 1 | 1 | 7 | 2 | 7 | 2 | 3 | 5 | 3 | 5 | 4 | 1 | | |
| Sum: | 723.700 | 1489.000 | 1730.000 | 130855.000 | 172462.000 | 48850.000 | 66982.000 | 314162.000 | 285414.000 | 68682.000 | 60812.000 | 798.000 | 981.700 | |
| Sum of Squares: | 33501.370 | 117083.... | 162700.000 | 1721946963 | 2140293836 | 233682970 | 308371922 | 6852886002 | 6243272466 | 295307298 | 267291782 | 39900.320 | 50799.010 | |

| | ins_120 | glu_0 | glu_120 | L2sc_1 | L2sc_2 | L2vis_1 | L2vis_2 | L4sc_1 | L4sc_2 | L4vis_1 | L4vis_2 | RTatt_1 | RTatt_2 |
|----|---------|-------|---------|--------|--------|---------|---------|--------|--------|---------|---------|---------|---------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 17.200 | 74 | 72 | 2235 | 2326 | 1236 | 1636 | 7264 | • | 3140 | • | 50.900 | 52.800 |
| 3 | 42.700 | 85 | 99 | 19509 | 20344 | 8590 | 9454 | 34578 | 34305 | 5791 | 7259 | 49.800 | 50.600 |
| 4 | 63.000 | 78 | 89 | • | 7342 | • | 4712 | 17093 | 17340 | 3853 | 5078 | • | 51.500 |
| 5 | 71.000 | 79 | 111 | 15518 | 13625 | 2506 | 2234 | 24221 | 26059 | 4174 | 3525 | 47.600 | 50.200 |
| 6 | 47.600 | 77 | 133 | 5572 | 4470 | 2880 | 2421 | 13539 | 13068 | 3539 | 3299 | 51.400 | 51.800 |
| 7 | 61.000 | 76 | 114 | 7904 | 7484 | 4852 | 3416 | 19810 | 20239 | 4416 | 46666 | 52.500 | 52.400 |
| 8 | 63.700 | 73 | 101 | 9407 | 8934 | 4036 | 2508 | 20798 | • | 4635 | • | 48.000 | 46.800 |
| 9 | 59.400 | 87 | 104 | • | 12292 | • | 3587 | • | 20720 | • | 3224 | • | 51.800 |
| 10 | 41.800 | 80 | 102 | 4958 | 5102 | 2061 | 3415 | 9809 | 8433 | 3558 | 3845 | 51.700 | 49.900 |
| 11 | 18.400 | 77 | 87 | 6827 | 5143 | 2786 | 2597 | 14192 | 13073 | 3530 | 3568 | 53.500 | 51.900 |
| 12 | 30.000 | 84 | 74 | 3988 | 4844 | 1591 | 2683 | 8120 | 8053 | 3188 | 3642 | 51.100 | 51.000 |
| 13 | 23.000 | 80 | 88 | • | 7601 | • | 3061 | 14324 | 16507 | 2294 | 2478 | 50.900 | 54.000 |
| 14 | 18.300 | 81 | 68 | 10137 | • | 2539 | • | 21135 | • | 5145 | • | 52.000 | 55.000 |
| 15 | 26.100 | 72 | 93 | 16523 | 20461 | 5237 | 6275 | • | • | • | 49.100 | 48.200 | • |
| 16 | 18.000 | 77 | 74 | • | 11508 | • | 2915 | 12756 | 19587 | 2397 | 3365 | 50.200 | 52.800 |
| 17 | 27.200 | 85 | 75 | 19182 | 14936 | 5417 | 4563 | 34014 | 29311 | 6173 | 4566 | 44.700 | 52.400 |
| 18 | 33.800 | 71 | 82 | 9095 | 9530 | 5119 | 4976 | 18743 | 20924 | 4359 | 4366 | 50.200 | 55.100 |
| 19 | 21.500 | 80 | 86 | • | 12698 | • | 4425 | 27934 | 26067 | 4581 | 5332 | 44.400 | 52.600 |
| 20 | 40.000 | 73 | 78 | • | 3822 | • | 2104 | 15832 | 11728 | 3909 | 2599 | • | 50.900 |

| | LTaft_1 | LTatt_2 | Avaatt_1 | Avaatt_2 | RTarea_1 | RTarea_2 | LTarea_1 | LTarea_2 | RTsc_1 | RTsc_2 | LTsc_1 | LTsc_2 | Thi_sc1 |
|----------------------|--------------|--------------|--------------|--------------|---------------|----------------|--------------|--------------|---------------|---------------|--------------|--------------|--------------|
| Type: | Real | Real | Real | Real | Integer | Integer | Integer | Integer | Integer | Integer | Real | Integer | Real |
| Source: | User Ente... | User Ente... | User Ente... | User Ente... | User Entered | User Entered | User Entered | User Entered | User Enter... | User Enter... | User Ente... | User Ente... | User Ente... |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Form... | Free Form... | Free For... | Free For... | . | . | . | . | . | . | • | • | • |
| Dec. Places: | 3 | 3 | 3 | 3 | . | . | . | . | . | . | 3 | 3 | 3 |
| Mean: | 49.069 | 50.911 | 50.342 | 51.287 | 10693.750 | 11153.263 | 10451.938 | 10879.632 | 9954.688 | 9378.632 | 9340.514 | 9351.737 | 9647.601 |
| Std. Deviation: | 2.654 | 2.053 | 1.938 | 1.994 | 1427.267 | 1594.620 | 1390.272 | 1443.747 | 2911.670 | 2182.426 | 3827.802 | 2198.184 | 3218.394 |
| Std. Error: | .664 | .471 | .457 | .457 | 356.817 | 365.831 | 347.568 | 331.218 | 727.918 | 500.683 | 956.950 | 504.298 | 804.598 |
| Variance: | 7.045 | 4.213 | 3.754 | 3.976 | 2037092.067 | 2542813.094 | 1932856.063 | 2084406.690 | 8477825.0... | 4762981.3... | 1.465E7 | 4832011.5... | 10358057.... |
| Coeff. of Variation: | .054 | .040 | .038 | .039 | .133 | .143 | .133 | .133 | .292 | .233 | .410 | .235 | .334 |
| Minimum: | 43.200 | 47.500 | 46.733 | 47.400 | 8750 | 8941 | 8221 | 8593 | 5823 | 5880 | 79.220 | 5468 | 4391.610 |
| Maximum: | 52.600 | 54.900 | 53.400 | 55.000 | 13611 | 14021 | 12865 | 13266 | 16157 | 14387 | 15872.000 | 14611 | 16014.500 |
| Range: | 9.400 | 7.400 | 6.667 | 7.600 | 4861.000 | 5080.000 | 4644.000 | 4673.000 | 10334.000 | 8507.000 | 15792.780 | 9143.000 | 11622.890 |
| Count: | 16 | 19 | 18 | 19 | 16 | 19 | 16 | 19 | 16 | 19 | 16 | 19 | 16 |
| Missing Cells: | 4 | 1 | 2 | 1 | 4 | 1 | 4 | 1 | 4 | 1 | 4 | 1 | 4 |
| Sum: | 785.100 | 967.300 | 906.150 | 974.450 | 171100.000 | 211912.000 | 167231.000 | 206713.000 | 159275.000 | 178194.000 | 149448.220 | 177683.000 | 154361.610 |
| Sum of Squares: | 38629.550 | 49321.590 | 45680.921 | 50048.027 | 186025706.... | 2409280938.... | 1776880801 | 228648603 | 1712700227 | 1756949540 | 1.616E9 | 1748620865 | 1.645E9 |

| | LTTatt_1 | LTTatt_2 | Avatt_1 | Avatt_2 | RTarea_1 | RTarea_2 | LTarea_1 | LTarea_2 | RTsc_1 | RTsc_2 | LTsc_1 | LTsc_2 | Thi_sc1 |
|----|----------|----------|---------|---------|----------|----------|----------|----------|--------|--------|-----------|--------|-----------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 49.100 | 53.100 | 50.933 | 52.950 | 8750 | 8941 | 8221 | 8788 | 8704 | 8906 | 79.220 | 8753 | 4391.610 |
| 3 | 49.500 | 50.300 | 49.967 | 50.450 | 11292 | 11122 | 10728 | 11076 | 11798 | 14387 | 12801.000 | 14611 | 12299.500 |
| 4 | • | 49.500 | 51.500 | 50.500 | • | 14021 | • | 13129 | • | 8186 | • | 8.95 | • |
| 5 | 48.300 | 48.400 | 48.700 | 49.300 | 11161 | 11936 | 11477 | 12052 | 10624 | 12240 | 10525.000 | 12509 | 10574.500 |
| 6 | 49.900 | 51.100 | 51.033 | 51.450 | 10721 | 10426 | 9939 | 10336 | 6785 | 9030 | 6638.000 | 9077 | 6711.500 |
| 7 | 49.800 | 49.800 | 51.567 | 51.100 | 11333 | 11341 | 11142 | 11142 | 8757 | 9211 | 9269.000 | 9601 | 9013.000 |
| 8 | 47.900 | 48.000 | 47.675 | 47.400 | 9922 | 10541 | 9875 | 10542 | 10240 | 10503 | 10666.000 | 10505 | 10453.000 |
| 9 | • | 51.900 | • | 51.800 | • | 10045 | • | 10178 | • | 8000 | • | 7793 | • |
| 10 | 51.400 | 49.800 | 51.000 | 49.850 | 12865 | 13159 | 12607 | 12902 | 5823 | 5880 | 5090.000 | 5468 | 5456.500 |
| 11 | 52.600 | 51.700 | 52.667 | 51.800 | 10787 | 10386 | 10644 | 10437 | 10770 | 10339 | 10806.000 | 10408 | 10788.000 |
| 12 | 49.200 | 50.400 | 50.433 | 50.700 | 12251 | 12768 | 12104 | 12513 | 6486 | 8065 | 6725.000 | 8111 | 6605.500 |
| 13 | 49.100 | 53.400 | 51.333 | 53.700 | 9005 | 9516 | 8751 | 9057 | 13115 | 8294 | 12459.000 | 8174 | 12787.000 |
| 14 | 52.400 | 54.200 | 53.400 | 54.600 | 9958 | 10371 | 9323 | 9446 | 9907 | 10326 | 9065.000 | 9404 | 9436.000 |
| 15 | 47.100 | 47.500 | 47.975 | 47.850 | 13611 | 13394 | 12865 | 12111 | 13174 | 12935 | 12474.000 | 11675 | 12824.000 |
| 16 | 51.400 | 52.700 | 51.467 | 52.750 | 10910 | 10395 | 11013 | 10215 | 5990 | 5990 | 5955.000 | 5955 | 5972.500 |
| 17 | 43.800 | 50.100 | 46.967 | 51.250 | 10633 | 10842 | 9918 | 10196 | 12108 | 10261 | 12515.000 | 11182 | 12311.500 |
| 18 | 50.400 | 54.900 | 51.900 | 55.000 | 8858 | 9166 | 8532 | 8593 | 8837 | 8930 | 8509.000 | 8293 | 8673.000 |
| 19 | 43.200 | 50.600 | 46.733 | 51.600 | 9043 | 9655 | 10092 | 10734 | 16157 | 9647 | 15872.000 | 10199 | 16014.500 |
| 20 | • | 49.900 | 50.900 | 50.400 | • | 13887 | • | 13266 | • | 7064 | • | 7770 | • |

| | Thi_sc2 | Thi_ar1 | Thi_ar2 | TEE_1 | TEE_2 | EEPA_1 | EEPA_2 | NVAEE_1 | NVAEE_2 | PAL_1 | PAL_2 | Lep_1 | Lep_2 |
|----------------------|---------------|---------------|---------------|-------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|-------------|-------------|
| Type: | Real | Real | Real | Integer | Real | Real | Real | Real | Real | Real | Real | Real | Real |
| Source: | User Enter... | User Enter... | User Enter... | User Ent... | User Entered | User Entered | User Entered | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Form... | Free Form... | • | • | Free Form... | Free Form... | Free Form... | Free Format... | Free Format... | Free Format... | Free Format... | Free For... | Free For... |
| Dec. Places: | 3 | 3 | . | . | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mean: | 9365.184 | 10589.375 | 11016.447 | 2611.214 | 2599.385 | 958.307 | 975.600 | 539.601 | 479.125 | 1.855 | 1.904 | 8.976 | 7.953 |
| Std. Deviation: | 2174.356 | 1364.247 | 1499.669 | 521.139 | 440.362 | 415.489 | 405.476 | 567.817 | 453.884 | .301 | .371 | 4.280 | 4.365 |
| Std. Error: | 498.831 | 341.062 | 344.048 | 139.280 | 122.134 | 111.044 | 112.459 | 163.915 | 131.025 | .081 | .107 | 1.038 | 1.127 |
| Variance: | 4727822.478 | 1861169.1... | 2249006.8... | 271586.3... | 193918.4... | 172630.701 | 164410.782 | 322416.597 | 206010.563 | .091 | .137 | 18.316 | 19.050 |
| Coeff. of Variation: | .232 | .129 | .136 | .200 | .169 | .434 | .416 | 1.052 | .947 | .163 | .195 | .477 | .549 |
| Minimum: | 5674.000 | 8665.000 | 8864.500 | 1951 | 1851 | 485.800 | 345.900 | -328.100 | -340.000 | 1.510 | 1.402 | 3.600 | 1.700 |
| Maximum: | 14498.000 | 13238.000 | 13576.500 | 3799 | 3486 | 1909.100 | 1817.400 | 1532.100 | 1450.400 | 2.516 | 2.640 | 16.900 | 18.800 |
| Range: | 8825.000 | 4543.000 | 4712.000 | 1848.000 | 1635.000 | 1423.300 | 1471.500 | 1860.200 | 1790.400 | 1.006 | 1.238 | 13.300 | 17.100 |
| Count: | 19 | 16 | 19 | 14 | 13 | 14 | 13 | 12 | 12 | 14 | 12 | 17 | 15 |
| Missing Cells: | 1 | 4 | 1 | 6 | 7 | 6 | 7 | 8 | 8 | 6 | 8 | 3 | 5 |
| Sum: | 177938.500 | 169430.000 | 209312.500 | 36557.000 | 33792.000 | 13416.300 | 12682.800 | 6475.210 | 5749.500 | 25.970 | 22.847 | 152.600 | 119.300 |
| Sum of Squares: | 1.752E9 | 1822075344 | 2.346E9 | 98988783 | 90165426 | 15101135... | 14346569... | 7040611.278 | 5020845.270 | 49.356 | 45.010 | 1662.860 | 1215.530 |

| | Thi_sc2 | Thi_ar1 | Thi_ar2 | TEE_1 | TEE_2 | EEPA_1 | EEPA_2 | NVAEE_1 | NVAEE_2 | PAL_1 | PAL_2 | Lep_1 | Lep_2 |
|----|-----------|-----------|-----------|-------|-------|----------|----------|----------|----------|-------|--------|--------|--------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 8829.500 | 8750.000 | 8894.500 | • | • | • | • | • | • | • | • | 3.700 | 4.600 |
| 3 | 14499.000 | 11010.000 | 11099.000 | 2451 | 2354 | 805.900 | 748.600 | 590.900 | 240.600 | 1.750 | 1.720 | 16.300 | 11.400 |
| 4 | 8190.500 | • | 13575.000 | 2492 | 2852 | 662.800 | 996.800 | • | 715.800 | 1.580 | 1.820 | 3.600 | 5.200 |
| 5 | 12374.500 | 11319.000 | 11994.000 | 2691 | 2943 | 971.900 | 1198.700 | -328.100 | 820.400 | 1.856 | 2.030 | 10.600 | 9.600 |
| 6 | 9053.500 | 10330.000 | 10381.000 | 2062 | 2182 | 485.800 | 613.800 | • | 363.200 | 1.510 | 1.620 | 5.200 | 5.300 |
| 7 | 9406.000 | 11237.500 | 11241.500 | 1951 | 2339 | 525.900 | 655.100 | 435.900 | 512.500 | 1.586 | 1.610 | 5.500 | • |
| 8 | 10504.000 | 9898.500 | 10541.500 | 2376 | 2557 | 738.400 | 1141.300 | 738.400 | 925.300 | 1.700 | 2.200 | 8.000 | 6.400 |
| 9 | 7896.500 | • | 10111.500 | 2191 | 2869 | 631.900 | 1232.100 | 153.900 | • | 1.635 | 2.125 | • | • |
| 10 | 5674.000 | 12736.000 | 13030.500 | 2602 | 3143 | 976.800 | 1508.700 | 976.800 | • | 1.906 | 2.380 | • | 1.700 |
| 11 | 10373.500 | 10715.500 | 10411.500 | • | • | • | • | -236.090 | • | • | 8.400 | 8.000 | • |
| 12 | 8088.000 | 12177.500 | 12640.500 | 2632 | 2480 | 1058.800 | 752.000 | 777.800 | 386.000 | 1.780 | 1.680 | 6.700 | 9.400 |
| 13 | 8234.000 | 8878.000 | 9286.500 | 2070 | 2420 | 633.000 | 1018.000 | -91.000 | 291.000 | 1.683 | • | 14.200 | 6.800 |
| 14 | 9865.000 | 9640.500 | 9908.500 | • | • | • | • | • | • | • | 13.200 | 9.300 | • |
| 15 | 12305.000 | 13238.000 | 12752.500 | • | • | • | • | • | • | • | 16.900 | 18.800 | • |
| 16 | 5972.500 | 10961.500 | 10305.000 | 3386 | 3486 | 1607.400 | 1817.400 | • | 1450.400 | 2.350 | 2.640 | 4.600 | 4.300 |
| 17 | 10721.500 | 10275.500 | 10519.000 | 3001 | • | 1150.900 | • | 927.900 | -340.000 | 1.940 | • | 10.300 | • |
| 18 | 8611.500 | 8695.000 | 8879.500 | • | • | • | • | • | • | • | 9.200 | 14.000 | • |
| 19 | 9923.000 | 9567.500 | 10194.500 | 2853 | 1851 | 1257.700 | 345.900 | 996.700 | 191.900 | 2.178 | 1.402 | 11.000 | • |
| 20 | 7447.000 | • | 13576.500 | 3799 | 2316 | 1909.100 | 654.400 | 1532.100 | 1924.000 | 2.516 | 1.620 | 5.200 | 4.500 |

| | En_int | Prot_g | CHO_g | Fat_g | Sat_g | Mono_g | Poly_g | Chol_mg | Fiber | Per_Pro | per_CHO | per_Fat | per_Sat | Fat_Mon |
|----------------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Type: | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | 'Real' |
| Source: | User Ent... | User Ent... | User Ente... | User En... | User Ent... | User Ent... | User Ent... | User Ent... | User Entered | User Entered | User Entered | User Enter... | User Enter... | User Entered |
| Class: | Continuous | Continuous | Continuous | Continu... | Continu... | Continu... | Continu... | Continu... | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free For... | Free For... | Free For... | Free For... | Free For... | Free For... | Free For... | Free For... | Free Format... | Free Format... | Free Format... | Free Format... | Free Format... | Free Format... |
| Dec. Places: | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mean: | 1969.333 | 68.003 | 279.780 | 63.182 | 22.127 | 23.595 | 12.781 | 164.306 | 18.511 | .142 | .566 | .286 | .347 | .370 |
| Std. Deviation: | 435.125 | 11.410 | 71.966 | 21.047 | 8.080 | 8.128 | 4.560 | 48.074 | 6.296 | .028 | .067 | .064 | .034 | .018 |
| Std. Error: | 102.560 | 2.689 | 16.962 | 4.961 | 1.905 | 1.916 | 1.075 | 11.331 | 1.484 | .007 | .016 | .015 | .008 | .004 |
| Variance: | 189333.7... | 130.178 | 5179.062 | 442.965 | 65.289 | 66.067 | 20.796 | 2311.108 | 39.640 | .001 | .004 | .004 | .001 | 3.139E-4 |
| Coeff. of Variation: | .221 | .168 | .257 | .333 | .365 | .344 | .357 | .293 | .340 | .195 | .118 | .223 | .096 | .048 |
| Minimum: | 1197.000 | 46.000 | 147.000 | 29.295 | 10.313 | 10.798 | 5.472 | 69.000 | 8.778 | .108 | .465 | .160 | .299 | .340 |
| Maximum: | 2677.887 | 90.388 | 407.625 | 103.258 | 38.650 | 38.753 | 21.327 | 250.545 | 29.740 | .206 | .720 | .408 | .425 | .400 |
| Range: | 1480.887 | 44.388 | 260.625 | 73.963 | 28.337 | 27.955 | 15.855 | 181.545 | 20.962 | .098 | .255 | .248 | .126 | .060 |
| Count: | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Missing Cells: | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Sum: | 35447.999 | 1224.055 | 5036.037 | 1137.272 | 398.286 | 424.714 | 230.059 | 2957.507 | 333.199 | 2.550 | 10.194 | 5.156 | 6.254 | 6.668 |
| Sum of Squares: | 7.303E7 | 85452.547 | 1497025.6... | 79385.3... | 9922.784 | 11144.368 | 3293.913 | 525224.714 | 6841.743 | .374 | 5.850 | 1.546 | 2.192 | 2.475 |

| | En_int | Prot_g | CHO_g | Fat_g | Sat_g | Mono_g | Poly_g | Chol_mg | Fiber | Per_Pro | per_CHO | per_Fat | per_Sat | Fat_Mon |
|----|----------|--------|---------|---------|--------|--------|--------|---------|--------|---------|---------|---------|---------|---------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 1197.000 | 46.000 | 147.000 | 49.000 | 19.000 | 17.000 | 10.000 | 148.000 | 9.000 | .150 | .490 | .370 | .380 | .340 |
| 3 | 2323.392 | 90.388 | 290.852 | 78.726 | 25.046 | 30.730 | 16.866 | 225.028 | 19.050 | .156 | .501 | .305 | .318 | .390 |
| 4 | 2677.887 | 72.495 | 407.625 | 83.158 | 28.250 | 29.667 | 19.097 | 162.627 | 29.740 | .108 | .609 | .279 | .340 | .357 |
| 5 | 2416.918 | 69.322 | 281.107 | 103.258 | 38.650 | 38.753 | 18.687 | 250.545 | 10.982 | .115 | .465 | .385 | .374 | .375 |
| 6 | 2058.293 | 72.303 | 314.398 | 60.583 | 19.585 | 23.230 | 12.642 | 225.173 | 15.237 | .141 | .611 | .265 | .323 | .383 |
| 7 | 2193.513 | 72.802 | 277.215 | 85.145 | 31.013 | 33.138 | 15.287 | 176.103 | 17.678 | .133 | .506 | .349 | .364 | .389 |
| 8 | 2026.000 | 72.000 | 289.000 | 68.000 | 27.000 | 28.000 | 9.000 | 143.000 | 23.000 | .140 | .570 | .300 | .400 | .400 |
| 9 | 2094.457 | 66.648 | 339.282 | 54.807 | 17.808 | 19.378 | 13.917 | 136.243 | 20.555 | .127 | .648 | .236 | .325 | .354 |
| 10 | 1720.188 | 48.012 | 201.577 | 77.932 | 33.115 | 27.303 | 12.417 | 139.505 | 11.608 | .112 | .469 | .408 | .425 | .350 |
| 11 | 1868.000 | 55.000 | 339.000 | 33.000 | 11.000 | 12.000 | 7.000 | 69.000 | 26.000 | .120 | .720 | .160 | .320 | .360 |
| 12 | 1888.078 | 56.612 | 289.295 | 60.325 | 21.053 | 22.568 | 12.117 | 184.738 | 24.860 | .122 | .623 | .292 | .349 | .374 |
| 13 | 1537.655 | 79.277 | 219.162 | 38.892 | 14.362 | 13.365 | 7.368 | 192.075 | 8.778 | .206 | .570 | .228 | .369 | .344 |
| 14 | 1959.000 | 72.000 | 286.000 | 65.000 | 22.000 | 24.000 | 14.000 | 161.000 | 21.000 | .150 | .580 | .300 | .340 | .370 |
| 15 | 1388.000 | 61.000 | 194.000 | 37.000 | 11.000 | 14.000 | 9.000 | 104.000 | 15.000 | .170 | .560 | .240 | .300 | .370 |
| 16 | 2359.873 | 77.280 | 350.085 | 65.812 | 19.692 | 24.283 | 16.598 | 175.458 | 21.278 | .131 | .593 | .251 | .299 | .369 |
| 17 | 1256.113 | 61.667 | 182.427 | 29.295 | 10.313 | 10.798 | 5.472 | 91.327 | 14.468 | .196 | .581 | .210 | .352 | .369 |
| 18 | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 19 | 1881.460 | 73.024 | 237.960 | 54.838 | 19.010 | 21.924 | 9.266 | 156.762 | 17.394 | .155 | .506 | .262 | .347 | .400 |
| 20 | 2632.170 | 78.227 | 390.053 | 92.502 | 30.388 | 34.575 | 21.327 | 216.922 | 27.570 | .119 | .593 | .316 | .329 | .374 |

| | Fat_Poi | Input Column |
|----|---------|--------------|
| 1 | * | |
| 2 | .210 | |
| 3 | .214 | |
| 4 | .230 | |
| 5 | .181 | |
| 6 | .209 | |
| 7 | .180 | |
| 8 | .130 | |
| 9 | .254 | |
| 10 | .159 | |
| 11 | .220 | |
| 12 | .201 | |
| 13 | .189 | |
| 14 | .210 | |
| 15 | .210 | |
| 16 | .252 | |
| 17 | .187 | |
| 18 | * | |
| 19 | .169 | |
| 20 | .231 | |

| | Fat_Pol | Input Column |
|----------------------|--------------|-------------------|
| Type: | Real | Real |
| Source: | User Entered | User Entered |
| Class: | Continuous | Continuous |
| Format: | Free Form... | Free Format Fixed |
| Dec. Places: | 3 | 3 |
| Mean: | .202 | . |
| Std. Deviation: | .032 | . |
| Std. Error: | .007 | . |
| Variance: | .001 | . |
| Coeff. of Variation: | .156 | . |
| Minimum: | .130 | . |
| Maximum: | .254 | . |
| Range: | .124 | . |
| Count: | 18 | . |
| Missing Cells: | 2 | . |
| Sum: | 3.635 | . |
| Sum of Squares: | .751 | . |

| | DOB | Ethnic | Age | group | orcon | Start | Situation | Status | Pre Date | Post Date | MONW | Geno # | Geno | LMP_1 | LMP-2 |
|----------------------|------------|-------------|----------|------------|------------|-------------|------------|--------------|---------------|--------------|-------------|-------------|-------------|-------------|-------------|
| Type: | Date/Ti... | String | Integer | Integer | Integer | Date/T... | String | Integer | Date/Time | Date/Time | Integer | Integer | String | Date/Tim... | Date/Time |
| Source: | User E... | User Ent... | User ... | User En... | User En... | User Ent... | User E... | User Entered | User Ent... | User Entered | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... |
| Class: | Nominal | Continu... | Conti... | Continu... | Continu... | Nominal | Continu... | Continuous | Continuous | Continuous | Continuous | Continuous | Nominal | Continuous | Continuous |
| Format: | 12/31/99 | . | . | . | . | 12/31/99 | . | . | 12/31/99 | . | . | . | . | 12/31/99 | 12/31/99 |
| Dec. Places: | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Mean: | 2.08E9 | . | 27.800 | 2.000 | .700 | 2.98E9 | . | 2.000 | 2972648160 | 2990437920 | 1.750 | 700.667 | . | 2.99E9 | 3001730... |
| Std. Deviation: | 1.088E8 | . | 3.488 | 0.000 | .470 | 2.946E7 | . | 0.000 | 25481367.3... | 25283876.335 | .444 | 226.176 | . | 1.643E7 | 2.175E7 |
| Std. Error: | 2.432E7 | . | .780 | 0.000 | .105 | 6.587E6 | . | 0.000 | 5697806.944 | 5653646.622 | .099 | 53.310 | . | 4953097... | 6.278E6 |
| Variance: | 1.183E... | . | 12.168 | 0.000 | .221 | 8.677E... | . | 0.000 | 6.493E14 | 6.393E14 | .197 | 51155.412 | . | 2.699E14 | 4.729E14 |
| Coeff. of Variation: | 5.221E-2 | . | .125 | 0.000 | .672 | 9.895E-3 | . | 0.000 | 8.572E-3 | 8.455E-3 | .254 | .323 | . | 5.493E-3 | 7.245E-3 |
| Minimum: | 11/23/62 | . | 23 | 2 | 0 | 3/ 3/97 | . | 2 | 2/18/97 | 8/12/97 | 1 | 443 | . | 1/19/98 | 12/24/97 |
| Maximum: | 8/ 7/74 | . | 34 | 2 | 1 | 11/25/99 | . | 2 | 7/14/99 | 1/28/00 | 2 | 1033 | . | 7/ 5/99 | 1/26/00 |
| Range: | 3.69E8 | . | 11.000 | 0.000 | 1.000 | 86140... | . | 0.000 | 75686400.0... | 77673600.000 | 1.000 | 590.000 | . | 45964800 | 65923200 |
| Count: | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 18 | 18 | 11 | 12 | |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 10 | 9 | |
| Sum: | 4.17E10 | . | 556.000 | 40.000 | 14.000 | 5.95E10 | . | 40.000 | 59452963200 | 59808758400 | 35.000 | 12612.000 | . | 3.29E10 | 3.6E10 |
| Sum of Squares: | 8.701E... | . | 15688 | 80.000 | 14.000 | 1.772E... | . | 80.000 | 1.767E20 | 1.778E20 | 65.000 | 9706450... | . | 9.838E19 | 1.081E20 |

Resistance Group N=20

| | DOB | Ethnic | Age | group | orcon | Start | Situation | Status | Pre Date | Post Date | MONW | Geno # | Geno | LMP_1 | LMP-2 |
|----|------------|--------|-----|-------|-------|----------|-----------|--------|----------|-----------|------|--------|------|----------|----------|
| 1 | • | | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 8/24/72 w | | 25 | 2 | 1 | 2/23/98 | done-paid | 2 | 2/13/98 | 9/18/98 | 2 | 631 | 11 | 2/11/98 | • |
| 3 | 8/7/74 w | | 24 | 2 | 1 | 6/18/99 | done-paid | 2 | 6/16/99 | 12/22/99 | 2 | 1031 | 11 | 6/2/99 | 12/15/99 |
| 4 | 1/27/70 w | | 27 | 2 | 1 | 5/9/97 | done-paid | 2 | 4/28/97 | 12/18/97 | 2 | 443 | 11 | • | • |
| 5 | 3/26/71 w | | 26 | 2 | 1 | 6/18/97 | done-paid | 2 | 5/21/97 | 1/14/98 | 2 | 452 | 11 | • | 12/31/97 |
| 6 | 11/23/62 w | | 34 | 2 | 1 | 6/30/97 | done-paid | 2 | 6/20/97 | 12/23/97 | 2 | 474 | 11 | • | • |
| 7 | 1/22/63 w | | 34 | 2 | 0 | 3/10/97 | done-paid | 2 | 2/28/97 | 9/16/97 | 2 | • | • | • | • |
| 8 | 9/15/71 w | | 27 | 2 | 1 | 12/19/97 | done-paid | 2 | 12/4/97 | 6/25/98 | 2 | 510 | 11 | • | • |
| 9 | 12/21/68 w | | 30 | 2 | 1 | 5/26/99 | done-paid | 2 | 5/25/99 | 12/8/99 | 1 | 458 | 11 | 5/8/99 | 9/10/99 |
| 10 | 3/20/65 w | | 34 | 2 | 0 | 7/14/99 | done-paid | 2 | 7/14/99 | 1/28/00 | 1 | 1033 | 11 | 7/5/99 | 1/26/00 |
| 11 | 4/19/73 w | | 24 | 2 | 1 | 4/20/98 | done-paid | 2 | 4/10/98 | 11/30/98 | 2 | 669 | 11 | • | • |
| 12 | 7/14/73 w | | 23 | 2 | 1 | 3/3/97 | done-paid | 2 | 2/18/97 | 8/12/97 | 2 | • | 11 | • | • |
| 13 | 10/29/68 w | | 29 | 2 | 0 | 2/16/98 | done-paid | 2 | 2/3/98 | 8/10/98 | 1 | 618 | 11 | 1/19/98 | 7/16/98 |
| 14 | 3/18/72 w | | 26 | 2 | 1 | 1/4/99 | done-paid | 2 | 1/21/98 | 7/12/99 | 2 | 964 | 11 | 12/8/98 | 6/26/99 |
| 15 | 11/27/71 w | | 26 | 2 | 1 | 6/16/97 | done-paid | 2 | 6/4/97 | 1/8/98 | 2 | 467 | 11 | • | 12/24/97 |
| 16 | 3/13/71 w | | 26 | 2 | 1 | 4/10/98 | done-paid | 2 | 4/1/98 | 10/21/98 | 1 | 658 | 12 | 3/17/98 | 10/ 6/98 |
| 17 | 6/29/70 w | | 28 | 2 | 1 | 8/3/98 | done-paid | 2 | 6/23/98 | 2/6/99 | 2 | 921 | 11 | 6/28/98 | 2/ 6/99 |
| 18 | 7/27/64 w | | 33 | 2 | 0 | 8/24/98 | done-paid | 2 | 8/13/98 | 2/9/99 | 2 | 870 | 11 | 8/11/98 | 1/29/99 |
| 19 | 3/4/72 w | | 25 | 2 | 1 | 3/29/97 | done-paid | 2 | 3/19/97 | 10/10/97 | 2 | 513 | 11 | • | • |
| 20 | 12/15/70 w | | 27 | 2 | 0 | 11/16/99 | done-paid | 2 | 11/16/98 | 6/21/99 | 2 | 951 | 11 | 11/ 1/98 | 5/22/99 |
| 21 | 8/24/70 w | | 28 | 2 | 0 | 11/25/99 | done-paid | 2 | 11/25/98 | 6/8/99 | 1 | 949 | 11 | 11/18/98 | 5/24/99 |

| | fh_dim | height1 | weight1 | BMI1 | height2 | weight2 | BMI2 | sbp_1 | sbp_2 | dbp_1 | dbp_2 | BMD total (g/cm2) | BMD total 2 |
|----------------------|-------------|--------------|---------------|-------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|
| Type: | Integer | Real | Real | Real | Real | Real | Real | Integer | Real | Real | Real | Real | Real |
| Source: | User Ent... | User Ente... | User Enter... | User E... | User Ente... | User Ente... | User E... | User Ent... | User Ent... | User Ent... | User Ent... | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuo... | Continuo... | Continuo... | Continuo... | Continuo... | Continuo... | Continuo... | Continuo... | Continuous | Continuous |
| Format: | . | Free Form... | Free Form... | Free F... | Free Form... | Free Form... | Free F... | * | * | * | * | Free Format Fixed | Free Format Fi... |
| Dec. Places: | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mean: | .250 | 164.660 | 59.145 | 21.861 | 164.640 | 60.755 | 22.456 | 116.400 | * | 68.050 | * | 1.170 | 1.183 |
| Std. Deviation: | .444 | 7.119 | 6.187 | 2.319 | 7.058 | 6.097 | 2.255 | 11.736 | * | 9.428 | * | .056 | .062 |
| Std. Error: | .099 | 1.592 | 1.383 | .519 | 1.578 | 1.363 | .504 | 2.624 | * | 2.108 | * | .012 | .014 |
| Variance: | .197 | 50.675 | 38.278 | 5.378 | 49.812 | 37.178 | 5.085 | 137.726 | * | 88.892 | * | .003 | .004 |
| Coeff. of Variation: | 1.777 | .043 | .105 | .106 | .043 | .100 | .100 | .101 | * | .139 | * | .047 | .052 |
| Minimum: | 0 | 151.000 | 47.200 | 16.066 | 151.000 | 52.400 | 17.837 | 99 | * | 51 | * | 1.042 | 1.021 |
| Maximum: | 1 | 180.000 | 70.200 | 25.525 | 180.000 | 73.000 | 26.622 | 137 | * | 84 | * | 1.284 | 1.299 |
| Range: | 1.000 | 29.000 | 23.000 | 9.459 | 29.000 | 20.600 | 8.785 | 38.000 | * | 33.000 | * | .242 | .278 |
| Count: | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 0 | 20 | 20 | 20 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 21 | 1 | 21 | 1 | 1 | 1 |
| Sum: | 5,000 | 3293.200 | 1182.900 | 437.214 | 3292.800 | 1215.100 | 449.120 | 2328.000 | 0.000 | 1361.000 | 0.000 | 23.390 | 23.650 |
| Sum of Squares: | 5,000 | 543221.140 | 70689.910 | 9659.989 | 543073.020 | 74529.790 | 10182.... | 273596.0... | 0.000 | 94305.000 | 0.000 | 27.413 | 28.040 |

| | fh_drm | height1 | weight1 | BMI1 | height2 | weight2 | BMI2 | sbp_1 | sbp_2 | dbp_1 | dbp_2 | BMD total (g/cm2) | BMD total 2 |
|----|--------|---------|---------|--------|---------|---------|--------|--------|-------|-------|-------|-------------------|-------------|
| 1 | 1 | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 2 | 0 | 174.800 | 68.200 | 22.320 | 174.000 | 73.000 | 24.112 | 130 | • | 80 | 1.193 | 1.209 |
| 3 | 3 | 1 | 173.000 | 60.000 | 20.047 | 173.000 | 60.800 | 20.315 | 107 | • | 56 | 1.097 | 1.114 |
| 4 | 4 | 0 | 166.200 | 55.900 | 20.237 | 166.200 | 55.800 | 20.201 | 129 | • | 75 | 1.216 | 1.263 |
| 5 | 5 | 0 | 163.600 | 59.300 | 22.156 | 164.000 | 60.000 | 22.308 | 112 | • | 75 | 1.140 | 1.166 |
| 6 | 6 | 0 | 151.000 | 58.200 | 25.525 | 151.000 | 60.700 | 26.622 | 114 | • | 56 | 1.284 | 1.299 |
| 7 | 7 | 0 | 173.200 | 58.100 | 19.368 | 172.800 | 60.900 | 20.395 | 100 | • | 60 | 1.180 | 1.231 |
| 8 | 8 | 0 | 171.400 | 47.200 | 16.066 | 171.400 | 52.400 | 17.837 | 128 | • | 74 | 1.154 | 1.172 |
| 9 | 9 | 1 | 160.700 | 61.800 | 23.931 | 160.700 | 63.300 | 24.512 | 99 | • | 51 | 1.201 | 1.200 |
| 10 | 10 | 1 | 164.000 | 68.000 | 25.283 | 164.400 | 69.400 | 25.678 | 131 | • | 65 | 1.100 | 1.127 |
| 11 | 11 | 0 | 163.200 | 66.700 | 25.043 | 163.200 | 67.100 | 25.193 | 103 | • | 64 | 1.158 | 1.155 |
| 12 | 12 | 0 | 156.600 | 53.000 | 21.612 | 156.000 | 56.700 | 23.299 | 129 | • | 83 | 1.130 | 1.141 |
| 13 | 13 | 0 | 166.800 | 59.500 | 21.386 | 166.800 | 62.400 | 22.428 | 129 | • | 79 | 1.157 | 1.165 |
| 14 | 14 | 0 | 165.300 | 55.000 | 20.129 | 164.600 | 55.500 | 20.485 | 115 | • | 64 | 1.210 | 1.219 |
| 15 | 15 | 0 | 158.600 | 58.800 | 23.376 | 158.600 | 59.400 | 23.615 | 113 | • | 67 | 1.224 | 1.226 |
| 16 | 16 | 1 | 154.800 | 50.300 | 20.991 | 154.800 | 52.800 | 22.034 | 116 | • | 70 | 1.042 | 1.021 |
| 17 | 17 | 1 | 161.000 | 54.400 | 20.987 | 161.000 | 54.000 | 20.833 | 109 | • | 58 | 1.193 | 1.190 |
| 18 | 18 | 0 | 180.000 | 70.200 | 21.667 | 180.000 | 70.400 | 21.728 | 108 | • | 70 | 1.192 | 1.218 |
| 19 | 19 | 0 | 163.000 | 53.200 | 20.023 | 163.000 | 53.500 | 20.136 | 103 | • | 65 | 1.121 | 1.114 |
| 20 | 20 | 0 | 164.200 | 64.800 | 24.034 | 165.000 | 66.800 | 24.536 | 137 | • | 84 | 1.163 | 1.180 |
| 21 | 21 | 0 | 161.800 | 60.300 | 23.034 | 162.300 | 60.200 | 22.854 | 116 | • | 65 | 1.235 | 1.240 |

| | BMC tot (g) | BMC tot 2 | BMC trunk | BMC trunk2 | BMC arms | BMC arms2 | BMC legs | BMC legs2 | BMD spine | BMD spine2 |
|----------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Type: | Integer | Integer | Integer | Integer | Integer | Integer | Integer | Integer | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | . | . | . | . | . | . | . | . | . | . |
| Dec. Places: | . | . | . | . | . | . | . | . | 3 | 3 |
| Mean: | 2510.800 | 2556.800 | 872.200 | 887.750 | 299.300 | 306.750 | 842.150 | 853.000 | 1.232 | 1.245 |
| Std. Deviation: | 263.237 | 262.063 | 111.177 | 101.375 | 42.199 | 39.118 | 101.511 | 109.481 | .085 | .106 |
| Std. Error: | 58.862 | 58.599 | 24.860 | 22.668 | 9.436 | 8.747 | 22.699 | 24.481 | .019 | .024 |
| Variance: | 69293.642 | 68676.800 | 12360.274 | 10276.829 | 1780.747 | 1530.197 | 10304.555 | 11986.105 | .007 | .011 |
| Coeff. of Variation: | .105 | .102 | .127 | .114 | .141 | .128 | .121 | .128 | .069 | .085 |
| Minimum: | 1997 | 1984 | 726 | 735 | 200 | 213 | 593 | 605 | 1.062 | 1.067 |
| Maximum: | 3103 | 3001 | 1168 | 1072 | 372 | 375 | 1020 | 1047 | 1.402 | 1.471 |
| Range: | 1106.000 | 1017.000 | 442.000 | 337.000 | 172.000 | 162.000 | 427.000 | 442.000 | .340 | .404 |
| Count: | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 50216.000 | 51136.000 | 17444.000 | 17755.000 | 5986.000 | 6135.000 | 16843.000 | 17060.000 | 24.635 | 24.903 |
| Sum of Squares: | 127398912.000 | 132049384... | 15449502.000 | 15957261.000 | 182444.000 | 1910985.000 | 14380119.000 | 14779916.000 | 30.481 | 31.223 |

| | BMC tot (g) | BMC tot 2 | BMC trunk | BMC trunk2 | BMC arms | BMC arms2 | BMC legs | BMC legs2 | BMD spine | BMD spine2 |
|----|-------------|-----------|-----------|------------|----------|-----------|----------|-----------|-----------|------------|
| 1 | • | • | • | • | • | • | • | • | • | • |
| 2 | 2777 | 2892 | 989 | 1044 | 305 | 332 | 1014 | 1047 | 1.340 | 1.305. |
| 3 | 2548 | 2579 | 948 | 916 | 269 | 312 | 864 | 878 | 1.200 | 1.126 |
| 4 | 2735 | 2739 | 952 | 975 | 350 | 326 | 929 | 932 | 1.313 | 1.305 |
| 5 | 2508 | 2551 | 774 | 853 | 345 | 302 | 824 | 820 | 1.143 | 1.260 |
| 6 | 2568 | 2614 | 926 | 946 | 297 | 311 | 875 | 890 | 1.212 | 1.333 |
| 7 | 2855 | 2969 | 942 | 938 | 359 | 375 | 950 | 1027 | 1.274 | 1.467 |
| 8 | 2324 | 2398 | 754 | 765 | 278 | 312 | 749 | 763 | 1.150 | 1.189 |
| 9 | 2344 | 2372 | 785 | 796 | 252 | 262 | 851 | 860 | 1.247 | 1.234 |
| 10 | 2310 | 2343 | 786 | 795 | 259 | 267 | 719 | 738 | 1.216 | 1.104. |
| 11 | 2504 | 2581 | 898 | 892 | 331 | 366 | 870 | 876 | 1.269 | 1.265 |
| 12 | 2116 | 2191 | 726 | 786 | 265 | 276 | 761 | 702 | 1.062 | 1.260 |
| 13 | 2341 | 2385 | 743 | 735 | 312 | 319 | 798 | 833 | 1.104 | 1.111 |
| 14 | 2400 | 2557 | 789 | 869 | 281 | 278 | 825 | 844 | 1.219 | 1.242 |
| 15 | 2558 | 2607 | 885 | 952 | 306 | 302 | 879 | 866 | 1.345 | 1.242 |
| 16 | 1997 | 1984 | 785 | 743 | 200 | 213 | 593 | 605 | 1.159 | 1.148 |
| 17 | 2512 | 2500 | 921 | 895 | 293 | 291 | 775 | 773 | 1.298 | 1.223 |
| 18 | 3103 | 3001 | 1168 | 1072 | 372 | 371 | 1020 | 1011 | 1.402 | 1.271 |
| 19 | 2269 | 2286 | 785 | 798 | 265 | 284 | 761 | 782 | 1.213 | 1.067 |
| 20 | 2667 | 2788 | 917 | 986 | 317 | 331 | 906 | 934 | 1.204 | 1.280 |
| 21 | 2780 | 2799 | 971 | 999 | 330 | 305 | 880 | 879 | 1.265 | 1.471 |

| | BMD pelvis | BMD pelvis2 | total ca++ | total ca++2 | Tis_Fa1 | Tis_Fa2 | Tis_Fa1.2 | Tis_Fa2.2 | Regn % fat | Regn % fat2 | F_mass1 |
|----------------------|------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------|------------------|------------------|
| Type: | Real | Real | Integer | Real | Real | Real | Real | Real | Real | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Format F... | • | • | Free Form... | Free Format F... | Free Format F... | Free Format F... |
| Dec. Places: | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
| Mean: | 1.149 | 1.155 | 954.150 | 970.150 | 30.055 | 29.665 | 30.055 | 29.665 | 28.825 | 28.465 | 17.13 |
| Std. Deviation: | .082 | .086 | 99.963 | 101.795 | 5.844 | 5.779 | 5.844 | 5.779 | 5.611 | 5.667 | 4.60 |
| Std. Error: | .018 | .019 | 22.352 | 22.762 | 1.307 | 1.292 | 1.307 | 1.292 | 1.255 | 1.267 | 1.03 |
| Variance: | .007 | .007 | 9992.661 | 10362.239 | 34.150 | 33.396 | 34.150 | 33.396 | 31.485 | 32.112 | 21.17 |
| Coeff. of Variation: | .071 | .075 | .105 | .105 | .194 | .195 | .194 | .195 | .195 | .199 | .27 |
| Minimum: | .985 | 1.001 | 759 | 754 | 20.400 | 19.600 | 20.400 | 19.600 | 20.400 | 18.700 | 9.43 |
| Maximum: | 1.343 | 1.354 | 1179 | 1140 | 43.900 | 42.700 | 43.900 | 42.700 | 42.400 | 41.200 | 28.53 |
| Range: | .358 | .353 | 420.000 | 386.000 | 23.500 | 23.100 | 23.500 | 23.100 | 22.000 | 22.500 | 19.09 |
| Count: | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 22.988 | 23.098 | 19083.000 | 19403.000 | 601.100 | 593.300 | 601.100 | 593.300 | 576.500 | 569.300 | 342.57 |
| Sum of Squares: | 26.550 | 26.817 | 18397905.000 | 19020703.000 | 18714.910 | 18234.770 | 18714.910 | 18234.770 | 17215.830 | 16815.250 | 6269.89 |

| | BMD pelvis | BMD pelvis2 | total ca++ | total ca++2 | Tis_Fa1 | Tis_Fa2 | Tis_Fa1.2 | Tis_Fa2.2 | Regn % fat | Regn % fat2 | F_mass1 |
|----|------------|-------------|------------|-------------|---------|---------|-----------|-----------|------------|-------------|---------|
| 1 | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 1.210 | 1.242 | 1.055 | 1.099 | 36.200 | 40.900 | 36.200 | 40.900 | 34.800 | 39.200 | 23.66 |
| 3 | 1.045 | 1.078 | 968 | 980 | 27.400 | 27.100 | 27.400 | 27.100 | 26.200 | 26.000 | 15.73 |
| 4 | 1.343 | 1.354 | 1039 | 1041 | 28.700 | 23.300 | 28.700 | 23.300 | 27.300 | 22.200 | 15.39 |
| 5 | 1.115 | 1.132 | 953 | 969 | 32.300 | 28.000 | 32.300 | 28.000 | 30.900 | 26.800 | 18.31 |
| 6 | 1.272 | 1.290 | 976 | 993 | 30.100 | 32.400 | 30.100 | 32.400 | 28.800 | 31.000 | 16.59 |
| 7 | 1.152 | 1.142 | 1085 | 1128 | 22.700 | 26.500 | 22.700 | 26.500 | 21.600 | 25.200 | 12.63 |
| 8 | 1.064 | 1.094 | 883 | 911 | 20.400 | 23.300 | 20.400 | 23.300 | 20.400 | 22.200 | 9.43 |
| 9 | 1.129 | 1.100 | 891 | 901 | 38.500 | 36.900 | 38.500 | 36.900 | 37.000 | 35.500 | 22.53 |
| 10 | .985 | 1.001 | 878 | 891 | 43.900 | 42.700 | 43.900 | 42.700 | 42.400 | 41.200 | 28.53 |
| 11 | 1.126 | 1.075 | 952 | 981 | 31.300 | 30.700 | 31.300 | 30.700 | 30.100 | 29.500 | 19.80 |
| 12 | 1.152 | 1.169 | 804 | 804 | 29.200 | 31.800 | 29.200 | 31.800 | 28.000 | 31.800 | 14.47 |
| 13 | 1.109 | 1.114 | 890 | 906 | 31.500 | 29.700 | 31.500 | 29.700 | 30.200 | 28.500 | 17.88 |
| 14 | 1.162 | 1.117 | 912 | 972 | 26.500 | 27.000 | 26.500 | 27.000 | 25.300 | 25.800 | 13.65 |
| 15 | 1.267 | 1.295 | 972 | 991 | 27.900 | 27.900 | 27.600 | 27.600 | 26.700 | 26.300 | 15.86 |
| 16 | 1.084 | 1.074 | 759 | 754 | 36.300 | 34.800 | 36.300 | 34.800 | 34.800 | 33.500 | 17.73 |
| 17 | 1.202 | 1.191 | 955 | 950 | 30.500 | 26.800 | 30.500 | 26.800 | 29.100 | 25.500 | 15.61 |
| 18 | 1.140 | 1.174 | 1179 | 1140 | 32.300 | 28.800 | 32.300 | 28.800 | 30.800 | 27.500 | 21.76 |
| 19 | 1.117 | 1.146 | 862 | 869 | 21.400 | 19.600 | 21.400 | 19.600 | 20.400 | 18.700 | 10.56 |
| 20 | 1.148 | 1.134 | 1014 | 1060 | 30.700 | 30.600 | 30.700 | 30.600 | 29.400 | 29.300 | 19.14 |
| 21 | 1.166 | 1.176 | 1056 | 1063 | 23.300 | 24.800 | 23.300 | 24.800 | 22.300 | 23.600 | 13.32 |

| | F_mass2 | FF_m1 | FF_m2 | LTM trunk | LTM trunk.2 | LTM arms | LTM arms2 | LTM legs | LTM legs2 | Appen_1 | Appen_2 | FM_tr |
|----------------------|----------------|--------------|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----------------|-----------------|---------------|
| Type: | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | 'Real' |
| Source: | User Entered | User Ente... | User Ente... | User Entered | User Entered | User Entered | User Ent... |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continu... |
| Format: | Free Format... | Free For... | Free For... | Free Format Fi... | Free Format ... | Free Format ... | Free Forma... |
| Dec. Places: | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mean: | 17.34 | 39.15 | 40.40 | 19.15 | 18.77 | 4.15 | 4.47 | 13.34 | 13.94 | 17.49 | 18.41 | 7.13 |
| Std. Deviation: | 4.88 | 3.73 | 3.20 | 1.65 | 3.61 | .56 | .50 | 1.54 | 1.65 | 1.99 | 2.04 | 2.24 |
| Std. Error: | 1.09 | .83 | .72 | .37 | .81 | .12 | .11 | .34 | .37 | .44 | .46 | .50 |
| Variance: | 23.78 | 13.90 | 10.27 | 2.71 | 13.01 | .31 | .25 | 2.38 | 2.71 | 3.95 | 4.15 | 5.03 |
| Coeff. of Variation: | .28 | .10 | .08 | .09 | .19 | .13 | .11 | .12 | .12 | .11 | .11 | .31 |
| Minimum: | 9.86 | 31.18 | 33.09 | 16.04 | 4.58 | 3.16 | 3.53 | 10.28 | 10.93 | 13.44 | 14.46 | 3.49 |
| Maximum: | 28.81 | 45.70 | 47.63 | 22.81 | 22.33 | 5.06 | 5.43 | 15.94 | 18.22 | 21.00 | 23.18 | 12.45 |
| Range: | 18.96 | 14.52 | 14.54 | 6.77 | 17.75 | 1.90 | 1.90 | 5.66 | 7.29 | 7.56 | 8.73 | 8.96 |
| Count: | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 346.72 | 783.07 | 807.98 | 382.96 | 375.44 | 82.96 | 89.41 | 266.84 | 278.88 | 349.80 | 368.30 | 142.60 |
| Sum of Squares: | 6462.78 | 30924.03 | 32837.05 | 7384.37 | 7295.09 | 349.99 | 404.41 | 3605.41 | 3940.32 | 6193.16 | 6861.05 | 1112.32 |

| | F_mass2 | FF_m1 | FF_m2 | LTM trunk | LTM trunk.2 | LTM arms | LTM arms2 | LTM legs | LTM legs2 | Appen_1 | Appen_2 | FM_lr |
|----|---------|-------|-------|-----------|-------------|----------|-----------|----------|-----------|---------|---------|-------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 28.81 | 41.65 | 41.71 | 20.26 | 19.48 | 4.26 | 4.51 | 15.10 | 15.81 | 19.36 | 20.32 | 9.49 |
| 3 | 15.74 | 41.68 | 42.34 | 20.84 | 20.24 | 3.88 | 4.57 | 14.91 | 15.27 | 18.79 | 19.84 | 6.25 |
| 4 | 12.40 | 38.19 | 40.75 | 18.04 | 4.58 | 4.46 | 4.58 | 13.27 | 14.54 | 17.73 | 19.13 | 6.08 |
| 5 | 16.07 | 38.43 | 41.33 | 18.02 | 20.29 | 4.74 | 4.66 | 12.81 | 13.44 | 17.56 | 18.10 | 7.89 |
| 6 | 18.84 | 38.46 | 39.32 | 19.18 | 18.86 | 4.17 | 4.53 | 13.05 | 13.89 | 17.22 | 18.42 | 7.52 |
| 7 | 15.47 | 42.98 | 42.84 | 19.69 | 18.93 | 4.92 | 5.24 | 15.64 | 15.89 | 20.56 | 21.13 | 3.53 |
| 8 | 11.58 | 34.52 | 38.10 | 17.47 | 18.84 | 3.27 | 3.97 | 11.14 | 12.57 | 14.41 | 16.54 | 3.49 |
| 9 | 21.99 | 35.98 | 37.60 | 17.34 | 18.22 | 3.36 | 3.88 | 13.16 | 13.27 | 16.52 | 17.15 | 10.49 |
| 10 | 28.51 | 36.48 | 38.28 | 18.54 | 18.84 | 3.95 | 4.61 | 11.93 | 12.93 | 15.88 | 17.54 | 12.45 |
| 11 | 19.36 | 43.46 | 43.79 | 20.57 | 20.65 | 5.06 | 5.43 | 15.94 | 15.20 | 21.00 | 20.63 | 7.72 |
| 12 | 17.09 | 35.14 | 36.70 | 17.41 | 18.25 | 3.64 | 4.31 | 11.80 | 11.97 | 15.43 | 16.27 | 6.38 |
| 13 | 17.13 | 38.88 | 40.64 | 19.43 | 18.39 | 4.41 | 4.99 | 12.57 | 13.98 | 16.98 | 18.96 | 8.65 |
| 14 | 14.37 | 37.93 | 38.85 | 18.90 | 19.99 | 3.82 | 3.78 | 12.44 | 12.23 | 16.26 | 16.01 | 6.53 |
| 15 | 15.52 | 41.06 | 40.78 | 19.73 | 20.41 | 4.38 | 4.38 | 14.25 | 13.35 | 18.63 | 17.73 | 6.91 |
| 16 | 17.67 | 31.18 | 33.09 | 16.04 | 16.62 | 3.16 | 3.53 | 10.28 | 10.93 | 13.44 | 14.46 | 7.32 |
| 17 | 13.53 | 35.62 | 37.03 | 17.78 | 17.93 | 3.73 | 4.04 | 12.09 | 12.76 | 15.82 | 16.81 | 5.53 |
| 18 | 19.24 | 45.70 | 47.63 | 22.81 | 22.33 | 4.64 | 4.96 | 13.31 | 18.22 | 17.95 | 23.18 | 8.54 |
| 19 | 9.86 | 38.80 | 40.44 | 18.86 | 20.16 | 3.83 | 4.11 | 13.49 | 13.53 | 17.32 | 17.64 | 3.95 |
| 20 | 19.53 | 43.20 | 44.23 | 20.49 | 21.73 | 4.73 | 4.96 | 15.21 | 14.75 | 19.94 | 19.71 | 8.21 |
| 21 | 14.03 | 43.73 | 42.51 | 21.56 | 20.71 | 4.55 | 4.37 | 14.46 | 14.34 | 19.01 | 18.72 | 5.66 |

| | FM_tr2 | FM_arms | FM_arms2 | FM legs | FM legs2 | FM_per1 | FM_per2 | VO2_J1 | VO2_J2 | VO2_kg1 | VO2_kg2 | max hr |
|----------------------|-------------|----------------|----------------|---------------|----------------|---------------|---------------|--------------|--------------|---------------|---------------|----------------|
| Type: | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Integer |
| Source: | User Ent... | User Entered | User Entered | User Enter... | User Entered | User Entered | User Entered | User Ente... | User Entered | User Entered | User Entered | User Ent... |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free For... | Free Format... | Free Format... | Free Form... | Free Format... | Free Forma... | Free Forma... | Free For... | Free For... | Free Forma... | Free Forma... | Free Format... |
| Dec. Places: | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | . |
| Mean: | 7.25 | 1.48 | 1.55 | 7.20 | 7.11 | 8.68 | 8.66 | 2.042 | 2.145 | 35.78 | 35.59 | 191.950 |
| Std. Deviation: | 2.33 | .49 | .58 | 1.98 | 2.18 | 2.28 | 2.62 | .412 | .339 | 6.84 | 5.70 | 7.924 |
| Std. Error: | .52 | .11 | .13 | .44 | .49 | .51 | .58 | .092 | .080 | 1.53 | 1.34 | 1.772 |
| Variance: | 5.44 | .24 | .34 | 3.94 | 4.73 | 5.21 | 6.84 | .170 | .115 | 46.81 | 32.47 | 62.787 |
| Coeff. of Variation: | .32 | .33 | .37 | .28 | .31 | .26 | .30 | .202 | .158 | .19 | .16 | .041 |
| Minimum: | 3.98 | .46 | .82 | 4.38 | 4.20 | 4.85 | 5.03 | 1.452 | 1.487 | 21.40 | 25.40 | 179 |
| Maximum: | 12.19 | 2.31 | 2.73 | 11.83 | 12.81 | 14.14 | 15.45 | 2.931 | 2.719 | 48.60 | 44.10 | 210 |
| Range: | 8.21 | 1.85 | 1.92 | 7.44 | 8.60 | 9.29 | 10.42 | 1.478 | 1.231 | 27.20 | 18.70 | 31.000 |
| Count: | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 18 | 20 | 18 | 20 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 3 | 1 |
| Sum: | 145.10 | 29.67 | 31.00 | 143.94 | 142.22 | 173.61 | 173.22 | 40.831 | 38.602 | 715.59 | 640.61 | 3839.000 |
| Sum of Squares: | 1156.10 | 48.60 | 54.45 | 1110.67 | 1101.29 | 1605.94 | 1630.25 | 86.590 | 84.738 | 26493.05 | 23350.86 | 738089.0... |

| | FM_tr2 | FM_arms | FM arms2 | FM legs | FM legs2 | FM_per1 | FM_per2 | VO2_I1 | VO2_I2 | VO2_kg1 | VO2_kg2 | max hr |
|----|--------|---------|----------|---------|----------|---------|---------|--------|--------|---------|---------|--------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 11.57 | 1.63 | 2.64 | 10.74 | 12.81 | 12.38 | 15.45 | 2.039 | 2.245 | 29.90 | 30.76 | 187 |
| 3 | 6.19 | 1.00 | 1.20 | 7.03 | 6.95 | 8.03 | 8.15 | 2.058 | 2.292 | 34.30 | 37.70 | 194 |
| 4 | 5.05 | 1.89 | 1.06 | 6.18 | 5.27 | 8.07 | 6.33 | 1.962 | 2.292 | 35.10 | 38.90 | 182 |
| 5 | 6.99 | 1.94 | 1.56 | 7.04 | 6.22 | 8.98 | 7.78 | 1.800 | 2.184 | 32.38 | 36.40 | 200 |
| 6 | 8.45 | .99 | 1.32 | 6.85 | 7.82 | 7.85 | 9.15 | 1.800 | 2.379 | 41.24 | 39.20 | 201 |
| 7 | 4.49 | 1.26 | 1.42 | 6.27 | 6.34 | 7.53 | 7.76 | 1.800 | • | 35.70 | • | 195 |
| 8 | 4.26 | .46 | .82 | 4.38 | 5.24 | 4.85 | 6.06 | 1.800 | 1.871 | 35.24 | 35.70 | 201 |
| 9 | 10.70 | 1.94 | 1.81 | 8.73 | 8.20 | 10.67 | 10.01 | 1.452 | 1.652 | 23.50 | 26.10 | 190 |
| 10 | 12.19 | 2.31 | 2.73 | 11.83 | 11.70 | 14.14 | 14.43 | 1.455 | 1.763 | 21.40 | 25.40 | 179 |
| 11 | 7.82 | 1.76 | 2.31 | 8.99 | 7.98 | 10.75 | 10.29 | 2.294 | • | 34.40 | • | 191 |
| 12 | 6.70 | 1.14 | 1.62 | 6.62 | 7.35 | 7.77 | 8.97 | 2.231 | 2.149 | 42.10 | 37.90 | 210 |
| 13 | 7.79 | 2.06 | 2.14 | 6.09 | 6.09 | 8.14 | 8.23 | 1.892 | 2.051 | 31.80 | 32.87 | 197 |
| 14 | 7.22 | 1.37 | 1.18 | 4.97 | 4.85 | 6.34 | 6.03 | 1.782 | 1.487 | 32.40 | 26.80 | 180 |
| 15 | 7.30 | 1.90 | 1.78 | 5.94 | 5.41 | 7.84 | 7.19 | 1.800 | 2.299 | 37.24 | 38.70 | 192 |
| 16 | 7.68 | 1.44 | 1.39 | 7.42 | 7.16 | 8.86 | 8.55 | 1.630 | 1.660 | 32.40 | 31.44 | 190 |
| 17 | 4.57 | 1.09 | .84 | 7.38 | 6.63 | 8.47 | 7.46 | 2.350 | 2.165 | 43.20 | 40.10 | 186 |
| 18 | 6.90 | 1.41 | 1.16 | 9.91 | 9.47 | 11.32 | 10.62 | 2.513 | 2.396 | 35.80 | 34.04 | 189 |
| 19 | 3.98 | .85 | .83 | 4.72 | 4.20 | 5.57 | 5.03 | 2.389 | 2.359 | 44.90 | 44.10 | 199 |
| 20 | 9.21 | 2.06 | 2.07 | 7.49 | 6.96 | 9.55 | 9.03 | 2.851 | 2.719 | 44.00 | 40.70 | 192 |
| 21 | 6.06 | 1.15 | 1.13 | 5.34 | 5.57 | 6.49 | 6.70 | 2.931 | 2.637 | 48.60 | 43.80 | 184 |

| | max hr2 | max RQ | max RQ2 | LTA | LTA2 | VO2_1 | VO2_2 | VCO2_1 | VCO2_2 | RMR_1 | RMR_2 | RQ | RQ2 | M_abs1 |
|----------------------|---------------|---------------|----------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|------------|------------|---------------|
| Type: | Integer | Real | Real | Real | Real | Integer | Integer | Integer | Integer | Integer | Integer | Real | Real | Real |
| Source: | User Enter... | User Enter... | User Entered | User Ent... | User Ent... | User Ent... | User Entered | User Entered | User Entered | User Ente... | User Ente... | User E... | User E... | User Enter... |
| Class: | Continuous | Continuous | Continuous | Conti... | Continu... | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | . | Free Form... | Free Format... | Free Fo... | • | • | • | • | • | • | • | • | • | Continuous |
| Dec. Places: | 2 | 2 | 0 | 0 | • | • | • | • | • | • | • | 2 | 2 | 3 |
| Mean: | 190.176 | 1.15 | 300 | 317 | 200.900 | 210.450 | 170.200 | 181.050 | 138.500 | 1451.100 | .85 | 5.51 | 364.133 | |
| Std. Deviation: | 8.553 | .05 | 193 | 290 | 16.546 | 20.549 | 14.951 | 17.437 | 114.307 | 139.763 | .03 | 20.83 | 91.103 | |
| Std. Error: | 2.074 | .01 | 50 | 70 | 3.700 | 4.595 | 3.343 | 3.899 | 25.560 | 31.252 | .01 | 4.66 | 20.371 | |
| Variance: | 73.154 | 2.22E-3 | 2.47E-3 | 37130 | 84125 | 273.779 | 422.261 | 223.537 | 304.050 | 13066.053 | 19533.674 | 1.15... | 433.84 | 8299.753 |
| Coeff. of Variation: | .045 | .04 | .04 | 1 | 1 | .082 | .098 | .088 | .096 | .083 | .096 | .04 | 3.78 | .250 |
| Minimum: | 176 | 1.08 | 42 | 91 | 170 | 157 | 151 | 133 | 1180 | 1070 | .79 | .80 | 219.340 | |
| Maximum: | 210 | 1.25 | 645 | 1300 | 234 | 261 | 201 | 221 | 1600 | 1780 | .92 | .94.00 | 522.700 | |
| Range: | 34.000 | .17 | .16 | 603 | 1209 | 64.000 | 104.000 | 50.000 | 88.000 | 420.000 | 710.000 | .13 | 93.20 | 303.360 |
| Count: | 17 | 20 | 17 | 15 | 17 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Missing Cells: | 4 | 1 | 4 | 6 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 3233.000 | 22.94 | 19.51 | 4494 | 5385 | 4018.000 | 4209.000 | 3404.000 | 3621.000 | 27570.000 | 29022.000 | 16.95 | 110.17 | 7282.660 |
| Sum of Squares: | 616011.000 | 26.35 | 22.43 | 18660... | 3051537 | 81241.80... | 893807.0... | 583608.000 | 661359.000 | 38253500 | 42484964 | 14.39 | 8849.78 | 2809552.139 |

| | max hr2 | max RQ | max RQ2 | LTA | LTA2 | VO2_1 | VO2_2 | VCO2_1 | VCO2_2 | RMR_1 | RMR_2 | RQ | RQ2 | M_abs1 |
|----|---------|--------|---------|-----|------|-------|-------|--------|--------|-------|-------|-----|---------|---------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 185 | 1.09 | 1.09 | • | 219 | 261 | 201 | 221 | 1530 | 1780 | .92 | .81 | 339.410 | |
| 3 | 194 | 1.25 | 1.24 | 202 | 323 | 208 | 228 | 167 | 201 | 1410 | 1580 | .80 | .80 | 434.590 |
| 4 | 183 | 1.22 | 1.22 | • | • | 185 | 206 | 158 | 175 | 1270 | 1420 | .86 | .85 | 325.860 |
| 5 | 199 | 1.16 | 1.16 | • | 116 | 179 | 196 | 151 | 165 | 1220 | 1340 | .85 | .84 | 305.710 |
| 6 | 210 | 1.15 | 1.18 | 443 | 239 | 170 | 185 | 152 | 165 | 1180 | 1280 | .89 | .90 | 395.400 |
| 7 | • | 1.21 | • | 605 | 1300 | 223 | 228 | 185 | 189 | 1530 | 1560 | .83 | .83 | 522.700 |
| 8 | 196 | 1.16 | 1.09 | • | • | 177 | 208 | 152 | 184 | 1220 | 1440 | .85 | .89 | 310.000 |
| 9 | 176 | 1.15 | 1.23 | 126 | 198 | 197 | 200 | 178 | 188 | 1370 | 1430 | .90 | 94.00 | 222.240 |
| 10 | 190 | 1.18 | 1.14 | 42 | 91 | 198 | 205 | 178 | 177 | 1380 | 1410 | .90 | .86 | 246.850 |
| 11 | • | 1.11 | • | 220 | 198 | 234 | 216 | 194 | 186 | 1600 | 1490 | .83 | .86 | 479.990 |
| 12 | 199 | 1.12 | 1.10 | 316 | 199 | 191 | 213 | 156 | 179 | 1300 | 1460 | .82 | .84 | 458.140 |
| 13 | • | 1.08 | • | 237 | 435 | 206 | 213 | 173 | 187 | 1410 | 1480 | .84 | .88 | 283.690 |
| 14 | 194 | 1.08 | 1.08 | 519 | 606 | 204 | 214 | 172 | 184 | 1400 | 1470 | .84 | .86 | 432.850 |
| 15 | 192 | 1.15 | 1.15 | 256 | 247 | 201 | 209 | 163 | 172 | 1360 | 1442 | .81 | .82 | 411.860 |
| 16 | 191 | 1.16 | 1.13 | 113 | 91 | 208 | 215 | 173 | 174 | 1420 | 1460 | .83 | .81 | 219.340 |
| 17 | 184 | 1.15 | 1.17 | 136 | 179 | 197 | 157 | 155 | 133 | 1340 | 1070 | .79 | .85 | 358.140 |
| 18 | 186 | 1.18 | 1.15 | • | 499 | 216 | 211 | 182 | 188 | 1480 | 1470 | .85 | .89 | 485.800 |
| 19 | 193 | 1.12 | 1.09 | 487 | 276 | 189 | 191 | 158 | 167 | 1290 | 1320 | .84 | .88 | 376.430 |
| 20 | 184 | 1.14 | 1.15 | 645 | 228 | 220 | 226 | 190 | 198 | 1520 | 1570 | .86 | .87 | 411.410 |
| 21 | 177 | 1.08 | 1.14 | 147 | 159 | 196 | 227 | 166 | 188 | 1340 | 1550 | .84 | .83 | 262.250 |

| | M_corr1 | M_abs2 | M_corr2 | M_FFM1 | M_FFM2 | Fasting_Ins 1 | Fasting_Ins 2 | Ins_1 | Ins_2 | Glu - 10' 1 | Glu 0' 1 | Glu 30' 1 |
|----------------------|---------------|---------------|---------------|--------------|--------------|---------------|---------------|------------|------------|--------------|--------------|---------------|
| Type: | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Integer | Real |
| Source: | User Enter... | User Enter... | User Enter... | User Entered | User Entered | User Entered | User Entered | User En... | User En... | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Form... | Free Form... | Free Form... | Free Form... | Free Format | Free Format | Fixed | Free Fo... | Free Fo... | * | * | Free Forma... |
| Dec. Places: | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mean: | 3666.910 | 402.06 | 407.684 | 9.33 | 10.03 | 9.03 | 8.06 | 73.78 | 75.16 | 75.350 | 75.150 | 77.27 |
| Std. Deviation: | 95.224 | 87.84 | 90.444 | 2.10 | 1.83 | 2.06 | 1.61 | 13.81 | 12.97 | 4.534 | 4.416 | 4.26 |
| Std. Error: | 21.293 | 19.64 | 20.224 | .47 | .41 | .57 | .45 | 3.09 | 2.90 | 1.014 | .987 | .95 |
| Variance: | 9067.532 | 7715.81 | 8180.172 | 4.43 | 3.34 | 4.25 | 2.60 | 190.65 | 168.30 | 20.555 | 19.503 | 18.18 |
| Coeff. of Variation: | .260 | .22 | .222 | .23 | .18 | .23 | .20 | .19 | .17 | .060 | .059 | .06 |
| Minimum: | 205.363 | 219.43 | 225.984 | 5.71 | 6.83 | 6.25 | 6.25 | 50.87 | 49.97 | 65 | 64 | 70.50 |
| Maximum: | 532.223 | 525.41 | 541.330 | 13.27 | 13.22 | 12.10 | 11.95 | 103.00 | 103.00 | 85 | 84 | 84.33 |
| Range: | 326.860 | 305.98 | 315.346 | 7.57 | 6.39 | 5.85 | 5.70 | 52.13 | 53.03 | 20.000 | 20.000 | 13.83 |
| Count: | 20 | 20 | 20 | 20 | 13 | 13 | 20 | 20 | 20 | 20 | 20 | 20 |
| Missing Cells: | 1 | 1 | 1 | 1 | 8 | 8 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 7338.197 | 8041.29 | 8153.688 | 186.56 | 200.62 | 117.40 | 104.80 | 1475.51 | 1503.19 | 1507.000 | 1503.000 | 1545.42 |
| Sum of Squares: | 2864739.966 | 3379719.93 | 3479554.718 | 1824.29 | 2075.86 | 1111.20 | 876.05 | 112479.... | 116176.... | 113943.000 | 113321.000 | 119761.50 |

| | M_corr1 | M_abs2 | M_corr2 | M_FFM1 | M_FFM2 | Fasting Ins 1 | Fasting Ins 2 | Ins_1 | Ins_2 | Glu - 10' 1 | Glu 0' 1 | Glu 30' 1 |
|----|---------|--------|---------|--------|--------|---------------|---------------|--------|--------|-------------|----------|-----------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 345.451 | 500.29 | 515.437 | 8.29 | 12.36 | • | • | 50.87 | 71.23 | 74 | 76 | , 75.33 |
| 3 | 402.849 | 447.43 | 460.963 | 9.66 | 10.89 | 8.50 | 10.30 | 70.77 | 76.40 | 72 | 72 | , 72.33 |
| 4 | 331.643 | 423.00 | 435.785 | 8.68 | 10.69 | 9.50 | • | 68.30 | 83.00 | 74 | 75 | 80.50 |
| 5 | 311.110 | 374.60 | 385.904 | 8.09 | 9.34 | • | • | 77.60 | 76.90 | 77 | 76 | 82.83 |
| 6 | 402.505 | 425.91 | 438.785 | 10.47 | 11.16 | • | • | 85.00 | 63.23 | 77 | 72 | 75.66 |
| 7 | 532.223 | 482.00 | 496.591 | 12.38 | 11.59 | 6.25 | 6.25 | 88.00 | 65.00 | 79 | 78 | 80.00 |
| 8 | 315.482 | 305.37 | 314.555 | 9.14 | 8.26 | • | • | 57.83 | 49.97 | 65 | 64 | 72.16 |
| 9 | 205.363 | 255.00 | 262.643 | 5.71 | 6.98 | 12.10 | 11.95 | 70.36 | 82.10 | 68 | 70 | 78.83 |
| 10 | 228.250 | 333.00 | 343.031 | 6.26 | 8.96 | 10.60 | 9.45 | 81.33 | 73.30 | 82 | 83 | 82.66 |
| 11 | 488.702 | 516.00 | 531.632 | 11.25 | 12.14 | 6.80 | 8.15 | 62.06 | 91.50 | 80 | 80 | 78.16 |
| 12 | 466.437 | 329.70 | 339.630 | 13.27 | 9.25 | 7.40 | 7.20 | 103.00 | 93.00 | 76 | 76 | 72.16 |
| 13 | 288.672 | 325.04 | 334.827 | 7.42 | 8.24 | 10.95 | 7.30 | 73.97 | 70.67 | 85 | 84 | 82.66 |
| 14 | 444.264 | 432.86 | 401.240 | 11.71 | 10.33 | 6.85 | 7.20 | 87.20 | 92.10 | 74 | 76 | 72.00 |
| 15 | 419.277 | 358.71 | 369.528 | 10.21 | 9.06 | • | • | 51.70 | 60.20 | 75 | 72 | 70.50 |
| 16 | 223.099 | 219.43 | 225.984 | 7.16 | 6.83 | 6.70 | 6.70 | 58.37 | 77.57 | 75 | 74 | 84.33 |
| 17 | 364.537 | 438.86 | 452.128 | 10.23 | 12.21 | 9.40 | 7.50 | 80.93 | 76.16 | 75 | 75 | 78.50 |
| 18 | 494.622 | 525.41 | 541.330 | 10.82 | 11.37 | • | 7.10 | 65.26 | 69.26 | 79 | 78 | 78.66 |
| 19 | 383.174 | 519.00 | 534.724 | 9.88 | 13.22 | • | • | 93.00 | 103.00 | 75 | 75 | 72.33 |
| 20 | 422.160 | 407.99 | 378.111 | 9.77 | 8.55 | 11.05 | 7.30 | 74.67 | 61.50 | 74 | 74 | 77.66 |
| 21 | 268.376 | 421.70 | 390.861 | 6.14 | 9.20 | 11.30 | 8.40 | 75.30 | 67.10 | 71 | 73 | 78.16 |

| | Glu 60' 1 | Glu 90' 1 | Glu 120' 1 | Ave Glu 1 | Glu -10' 2 | Glu 0' 2 | Glu 30' 2 | Glu 60' 2 | Glu 90' 2 | Glu 120' 2 | Ave Glu 2 | Chol_1 |
|----------------------|---------------|---------------|---------------|---------------|--------------|--------------|---------------|---------------|---------------|---------------|----------------|--------------|
| Type: | Real | Real | Real | Real | Integer | Integer | Real | Real | Real | Real | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Forma... | Free Forma... | Free Forma... | Free Forma... | * | * | Free Forma... | Free Forma... | Free Forma... | Free Forma... | Free Format... | * |
| Dec. Places: | 2 | 2 | 2 | 2 | . | . | 2 | 2 | 2 | 2 | 2 | . |
| Mean: | 79.40 | 79.57 | 76.78 | 77.68 | 76.105 | 75.900 | 81.37 | 79.35 | 77.30 | 75.77 | 78.45 | 182.850 |
| Std. Deviation: | 5.31 | 8.85 | 3.54 | 3.24 | 3.740 | 2.936 | 27.37 | 6.50 | 3.86 | 4.95 | 8.94 | 19.874 |
| Std. Error: | 1.19 | 1.98 | .81 | .74 | .858 | .657 | 6.12 | 1.45 | .86 | 1.11 | 2.00 | 4.444 |
| Variance: | 28.19 | 78.40 | 12.56 | 10.50 | 13.988 | 8.621 | 749.19 | 42.26 | 14.90 | 24.47 | 79.93 | 394.976 |
| Coeff. of Variation: | .07 | .11 | .05 | .04 | .049 | .039 | .34 | .08 | .05 | .07 | .11 | .109 |
| Minimum: | 72.00 | 69.83 | 71.00 | 72.49 | 70 | 72 | 69.16 | 69.80 | 68.30 | 68.00 | 68.98 | 144 |
| Maximum: | 95.00 | 112.00 | 86.00 | 83.57 | 86 | 87 | 196.33 | 98.33 | 83.50 | 84.16 | 112.87 | 228 |
| Range: | 23.00 | 42.17 | 15.00 | 11.08 | 16.000 | 15.000 | 127.17 | 28.53 | 15.20 | 16.16 | 43.89 | 84.000 |
| Count: | 20 | 19 | 19 | 19 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Missing Cells: | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 1588.00 | 1591.41 | 1458.78 | 1475.90 | 1446.000 | 1518.000 | 1627.42 | 1587.07 | 1546.02 | 1515.44 | 1568.93 | 3657.000 |
| Sum of Squares: | 126622.85 | 128118.83 | 112228.13 | 114835.28 | 110300.000 | 115380.000 | 146659.34 | 126742.47 | 119792.02 | 115292.83 | 124595.72 | 676187.000 |

| | Glu 60' 1 | Glu 90' 1 | Glu 120' 1 | Ave Glu 1 | Glu -10' 2 | Glu 0' 2 | Glu 30' 2 | Glu 60' 2 | Glu 90' 2 | Glu 120' 2 | Ave Glu 2 | Chol_1 |
|----|-----------|-----------|------------|-----------|------------|----------|-----------|-----------|-----------|------------|-----------|--------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 85.66 | 77.83 | 73.33 | 78.00 | 73 | 72 | 74.50 | 71.16 | 75.83 | 70.50 | 72.99 | 219 |
| 3 | 72.00 | 75.66 | 71.00 | 72.74 | 77 | 76 | 80.00 | 81.00 | 83.00 | 80.16 | 81.04 | 144 |
| 4 | 76.66 | 75.16 | 76.16 | 77.12 | 78 | 77 | 74.00 | 84.33 | 79.66 | 77.50 | 78.87 | 172 |
| 5 | 78.33 | 82.66 | 79.00 | 80.70 | 79 | 76 | 76.33 | 83.66 | 82.00 | 80.33 | 80.58 | 193 |
| 6 | 74.83 | 74.83 | 74.00 | 74.74 | 77 | 76 | 74.66 | 77.33 | 79.00 | 73.00 | 75.99 | 163 |
| 7 | 74.66 | 81.66 | 76.83 | 78.28 | 76 | 76 | 71.83 | 77.16 | 75.33 | 77.33 | 75.41 | 177 |
| 8 | 72.33 | 69.83 | 75.66 | 72.49 | 72 | 75 | 69.83 | 69.80 | 68.30 | 68.00 | 68.98 | 182 |
| 9 | 81.75 | 76.66 | 75.50 | 78.18 | 75 | 75 | 76.66 | 81.33 | 81.83 | 77.83 | 79.41 | 176 |
| 10 | 83.16 | 85.16 | 83.33 | 83.57 | 86 | 87 | 89.16 | 84.66 | 83.50 | 84.16 | 85.37 | 190 |
| 11 | 77.66 | 79.66 | 78.33 | 78.45 | 73 | 75 | 196.33 | 98.33 | 74.83 | 82.00 | 112.87 | 201 |
| 12 | 95.00 | 112.00 | • | • | 76 | 76 | 73.50 | 74.33 | 77.00 | 69.66 | 73.62 | 181 |
| 13 | 83.66 | 79.16 | 77.50 | 80.74 | 79 | 75 | 75.33 | 79.83 | 77.60 | 82.50 | 78.81 | 178 |
| 14 | 76.16 | 76.83 | 74.16 | 74.78 | 78 | 75 | 73.50 | 75.00 | 74.00 | 71.33 | 73.45 | 183 |
| 15 | 77.50 | 72.16 | 72.83 | 73.24 | 81 | 76 | 76.16 | 85.00 | 80.00 | 75.16 | 79.08 | 162 |
| 16 | 81.00 | 75.00 | 79.16 | 79.87 | 70 | 74 | 73.66 | 86.00 | 80.16 | 81.50 | 80.33 | 228 |
| 17 | 83.16 | 75.50 | 74.50 | 77.91 | 75 | 76 | 75.66 | 77.50 | 74.66 | 73.16 | 75.24 | 187 |
| 18 | 78.66 | 82.66 | 77.50 | 79.37 | • | 78 | 75.66 | 76.00 | 76.50 | 70.00 | 74.54 | 164 |
| 19 | 79.83 | 74.16 | 76.83 | 75.78 | 75 | 76 | 69.16 | 75.66 | 75.83 | 77.33 | 74.49 | 179 |
| 20 | 74.83 | 76.33 | 77.16 | 76.49 | 75 | 74 | 78.33 | 75.33 | 74.66 | 73.33 | 75.41 | 207 |
| 21 | 81.16 | 88.50 | 86.00 | 83.45 | 71 | 73 | 73.16 | 73.66 | 72.33 | 70.66 | 72.45 | 171 |

| | Trig_1 | HDL_1 | LDL_1 | Ch_HDL1 | ins_0 | Ins_120 | glu_0 | glu_120 | L2sc_1 | L2sc_2 | L2vis_1 | L2vis_2 | L4sc_1 |
|----------------------|-------------|-------------|----------------|-------------|--------------|-------------|--------------|--------------|-------------|-------------|--------------|--------------|-------------|
| Type: | Integer | Integer | Real | Real | Real | Real | Real | Real | Integer | Integer | Integer | Integer | Integer |
| Source: | User Ent... | User Ent... | User Entered | User Ent... | User Entered | User Ent... | User Entered | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | . | . | Free Format... | Free Fo... | Free Form... | Free Fo... | Free Fo... | Free Form... | . | . | . | . | . |
| Dec. Places: | . | . | 2 | 3 | 3 | 0 | 0 | 0 | . | . | . | . | . |
| Mean: | 100.850 | 56.450 | 106.200 | 3.40 | 8.550 | 61.515 | 79 | 96 | 10868.000 | 9516.316 | 4265.231 | 3332.684 | 18935.526 |
| Std. Deviation: | 38.072 | 14.051 | 19.851 | .82 | 3.194 | 50.850 | 6 | 27 | 3830.082 | 4209.850 | 3516.592 | 1265.773 | 7874.961 |
| Std. Error: | 8.513 | 3.142 | 4.439 | .18 | .714 | 11.370 | 1 | 6 | 1023.633 | 965.806 | 975.327 | 290.388 | 1806.640 |
| Variance: | 1449.503 | 197.418 | 394.063 | .67 | 10.201 | 2585.746 | 39 | 703 | 1.467E7 | 1.772E7 | 12366422.... | 1602180.7... | 6.202E7 |
| Coeff. of Variation: | .378 | .249 | .187 | .24 | .374 | .827 | 8E-2 | 3E-1 | .352 | .442 | .824 | .380 | .416 |
| Minimum: | 61 | 37 | 77 | 2.00 | 5.000 | 11.300 | 64 | 51 | 4524 | 3266 | 1486 | 1702 | 6684 |
| Maximum: | 189 | 94 | 146 | 4.80 | 16.900 | 254.600 | 90 | 145 | 18300 | 18061 | 13112 | 6647 | 30197 |
| Range: | 128.000 | 57.000 | 69.000 | 2.80 | 11.900 | 243.300 | 26 | 94 | 13776.000 | 14795.000 | 11626.000 | 4945.000 | 23513.000 |
| Count: | 20 | 20 | 20 | 20 | 20 | 19 | 19 | 14 | 19 | 13 | 19 | 19 | 19 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 7 | 2 | 8 | 2 | 2 | 2 |
| Sum: | 2017.000 | 1129.000 | 2124.000 | 68.10 | 171.000 | 1230.300 | 1510 | 1823 | 152152.000 | 180810.000 | 55448.000 | 63321.000 | 359775.000 |
| Sum of Squares: | 230955.0... | 67483.000 | 233056.0... | 244.65 | 1655.860 | 124811.070 | 120672 | 187462 | 1844291.828 | 2039656.166 | 384895586 | 239868151 | 7928799185 |

| | Trig_1 | HDL_1 | LDL_1 | Ch_HDL1 | ins_0 | ins_120 | glu_0 | glu_120 | L2sc_1 | L2sc_2 | L2vis_1 | L2vis_2 | L4sc_1 |
|----|--------|-------|-------|---------|--------|---------|-------|---------|--------|--------|---------|---------|--------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 73 | 69 | 135 | 3.20 | 10.200 | 40.800 | 77 | 72 | 13233 | 18061 | 1944 | 2297 | 30197 |
| 3 | 85 | 49 | 78 | 2.90 | 8.100 | 45.700 | 79 | 139 | 5345 | 5367 | 2094 | 2212 | 7053 |
| 4 | 134 | 48 | 97 | 3.58 | 8.500 | 46.700 | 72 | 69 | • | 5279 | • | 2175 | 12936 |
| 5 | 174 | 41 | 117 | 4.71 | 7.000 | 25.600 | • | • | 9760 | • | • | 4051 | 18499 |
| 6 | 68 | 52 | 97 | 3.13 | 5.000 | 43.100 | 76 | 101 | 11943 | 13876 | • | 4509 | 22231 |
| 7 | 68 | 39 | 124 | 4.50 | 6.000 | 53.000 | 82 | 79 | • | 6884 | • | 3232 | 10042 |
| 8 | 87 | 62 | 103 | 2.94 | 5.500 | 55.500 | 75 | 134 | 4524 | 6471 | 1486 | 3101 | 7575 |
| 9 | 107 | 60 | 95 | 2.93 | 16.900 | 68.300 | 74 | 100 | 14844 | 13423 | 13112 | 6647 | 28041 |
| 10 | 84 | 66 | 107 | 2.90 | 15.100 | 254.600 | 87 | 145 | 18300 | • | 10183 | • | 27102 |
| 11 | 144 | 56 | 116 | 3.59 | 8.800 | 84.500 | 85 | 125 | • | 15791 | • | 2491 | 27896 |
| 12 | 189 | 38 | 105 | 4.80 | 10.000 | 49.000 | 85 | 88 | • | 7884 | • | 3438 | • |
| 13 | 121 | 69 | 85 | 2.58 | 10.800 | 62.300 | 85 | 85 | 11869 | 11992 | 5291 | 5265 | 22683 |
| 14 | 138 | 57 | 98 | 3.21 | 8.300 | 48.200 | 81 | 78 | 12333 | 3266 | 2782 | 2368 | 17972 |
| 15 | 71 | 71 | 77 | 2.28 | 5.000 | 13.000 | 64 | 87 | 13222 | 13678 | 3651 | 4219 | 27723 |
| 16 | 117 | 69 | 136 | 3.30 | 8.700 | 64.800 | 86 | 98 | 10060 | 9829 | 2133 | 2981 | 20270 |
| 17 | 66 | 94 | 80 | 2.00 | 9.900 | 45.400 | 80 | 67 | 6347 | 5186 | 3467 | 3063 | 10868 |
| 18 | 61 | 51 | 101 | 3.20 | 5.000 | 32.100 | 79 | 78 | 8819 | 7616 | 2413 | 2340 | 24254 |
| 19 | 77 | 37 | 127 | 4.80 | 5.000 | 11.300 | 90 | 51 | • | 5465 | • | 2602 | 6684 |
| 20 | 65 | 48 | 146 | 4.31 | 8.100 | 105.100 | 78 | 120 | 12668 | 13227 | 4806 | 4628 | 22460 |
| 21 | 88 | 53 | 100 | 3.23 | 9.100 | 81.300 | 75 | 107 | 8645 | 7755 | 2086 | 1702 | 15289 |

| | L4sc_2 | L4vis_1 | L4vis_2 | RTatt_1 | RTatt_2 | LTatt_1 | LTatt_2 | Avatt_1 | Avatt_2 | RTarea_1 | RTarea_2 | LTarea_1 | LTarea_2 |
|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|--------------|--------------|
| Type: | Long Integer | Integer | Real | Real | Real | Real | Real | Real | Real | Integer | Integer | Integer | Integer |
| Source: | User Entered... | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | . | . | • | Free Form... | Free Form... | Free Form... | Free Form... | Free Form... | Free Form... | . | . | . | . |
| Dec. Places: | . | . | • | 2 | 2 | 2 | 2 | 2 | 2 | . | . | . | . |
| Mean: | 17992.167 | 3995.056 | 3583.167 | 49.67 | 52.35 | 49.53 | 52.05 | 50.42 | 52.20 | 10801.294 | 11741.176 | 10683.235 | 11346.529 |
| Std. Deviation: | 8665.616 | 2202.572 | 1239.997 | 1.67 | 3.15 | 1.75 | 3.17 | 1.55 | 3.13 | 1970.741 | 1611.112 | 1736.012 | 1447.477 |
| Std. Error: | 2042.505 | 519.151 | 292.270 | .40 | .76 | .42 | .77 | .36 | .76 | 477.975 | 390.752 | 421.045 | 351.065 |
| Variance: | 7.509E7 | 4851324.7... | 1537593.6... | 2.77 | 9.90 | 3.06 | 10.07 | 2.39 | 9.82 | 3883819.346 | 2595682.029 | 3013738.816 | 2095189.640 |
| Coeff. of Variation: | .482 | .551 | .346 | .03 | .06 | .04 | .06 | .03 | .06 | .182 | .137 | .162 | .128 |
| Minimum: | 6486 | 887 | 1784 | 46.90 | 49.30 | 47.10 | 48.80 | 48.43 | 49.25 | 7139 | 8790 | 7232 | 8779 |
| Maximum: | 37348 | 10184 | 6318 | 53.00 | 60.90 | 52.40 | 60.60 | 53.38 | 60.75 | 15243 | 15076 | 13827 | 14083 |
| Range: | 30862.000 | 9297.000 | 4534.000 | 6.10 | 11.60 | 5.30 | 11.80 | 4.95 | 11.50 | 8104.000 | 6286.000 | 6595.000 | 5304.000 |
| Count: | 18 | 18 | 18 | 17 | 17 | 17 | 18 | 17 | 17 | 17 | 17 | 17 | 17 |
| Missing Cells: | 3 | 3 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 |
| Sum: | 323859.000 | 71911.000 | 64497.000 | 844.44 | 890.00 | 842.00 | 884.80 | 907.51 | 887.40 | 183622.000 | 199600.000 | 181615.000 | 192891.000 |
| Sum of Squares: | 7103504347 | 369760961 | 257242593 | 41990.18 | 46752.56 | 41752.70 | 46212.28 | 45795.07 | 46479.36 | 2045496338.... | 2385069736.... | 1988455599 | 2222166439 |

| | L4sc_2 | L4vis_1 | L4vis_2 | RTatt_1 | RTatt_2 | LTatt_1 | LTatt_2 | Avatt_1 | Avatt_2 | RTarea_1 | RTarea_2 | LTarea_1 | LTarea_2 |
|----|--------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|
| 1 | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 2 | 37348 | 2536 | 3351 | 48.30 | 49.70 | 47.70 | 48.80 | 48.57 | 49.25 | 10200 | 11583 | 9865 | 11678 |
| 3 | 7020 | 3432 | 2712 | 50.04 | 60.90 | 49.20 | 60.60 | 53.38 | 60.75 | 11674 | 12380 | 11308 | 11879 |
| 4 | 12935 | 2883 | 2834 | 50.50 | 52.80 | 51.40 | 52.90 | 51.57 | 52.85 | 11009 | 11553 | 10471 | 10991 |
| 5 | 16102 | 3979 | 4205 | 48.20 | 50.80 | 48.10 | 50.90 | 49.03 | 50.85 | 10464 | 11035 | 10192 | 10624 |
| 6 | 26000 | 3232 | 4426 | 46.90 | 52.50 | 47.60 | 51.10 | 49.00 | 51.80 | 15243 | 15076 | 13827 | 13616 |
| 7 | 12909 | 3248 | 4635 | 50.10 | 50.30 | 48.00 | 51.40 | 49.47 | 50.85 | 9785 | 10621 | 9295 | 10498 |
| 8 | 9040 | 2092 | 3024 | 47.20 | 51.00 | 47.10 | 50.20 | 48.43 | 50.60 | 7139 | 9352 | 7232 | 9481 |
| 9 | * | * | * | 48.90 | 59.10 | 48.80 | 58.60 | 52.27 | 58.85 | 10442 | 11346 | 10632 | 11613 |
| 10 | * | 10184 | * | 49.30 | * | 49.50 | * | 49.40 | * | 7997 | * | 9277 | * |
| 11 | 28430 | 4451 | 4048 | * | 53.40 | * | 53.30 | * | 53.35 | * | 12924 | * | 11567 |
| 12 | 17942 | * | 3091 | * | 52.90 | * | 52.10 | * | 52.50 | * | 12550 | * | 11167 |
| 13 | 23964 | 7993 | 6318 | 52.30 | 49.90 | 51.60 | 50.80 | 51.27 | 50.35 | 10646 | 10469 | 10808 | 10260 |
| 14 | 6486 | 2818 | 2677 | 48.50 | 50.70 | 47.50 | 50.00 | 48.90 | 50.35 | 10056 | 8790 | 10742 | 8779 |
| 15 | 25320 | 2931 | 2572 | 50.10 | 50.70 | 50.60 | 50.00 | 50.47 | 50.35 | 12698 | 13569 | 12749 | 14083 |
| 16 | 19871 | 4316 | 4373 | 53.00 | 53.00 | 52.40 | 52.90 | 52.80 | 52.95 | 8662 | 10078 | 7935 | 9411 |
| 17 | 9387 | 4013 | 2809 | 50.80 | * | 51.40 | * | 51.10 | * | 9990 | * | 10042 | * |
| 18 | 23851 | 4062 | 3989 | 49.20 | * | 49.40 | * | 49.30 | * | 12156 | * | 12482 | * |
| 19 | 9081 | 887 | 1784 | * | 51.30 | * | 49.30 | 51.30 | 50.30 | * | 12208 | * | 11826 |
| 20 | 24466 | 6281 | 5790 | 49.50 | 49.30 | 49.70 | 49.30 | 49.50 | 49.30 | 12770 | 13407 | 12124 | 12829 |
| 21 | 13707 | 2573 | 1859 | 51.60 | 51.70 | 52.00 | 52.60 | 51.77 | 52.15 | 12691 | 12659 | 12584 | 12589 |

| | RTsc_1 | RTsc_2 | LTsc_1 | LTsc_2 | Thi_sc1 | Thi_sc2 | Thi_ar1 | Thi_ar2 | TEE_1 | TEE_2 | EEPA_1 | EEPA_2 | NVAEE_1 |
|----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|
| Type: | Integer | Integer | Integer | Real | Real | Real | Real | Integer | Real | Real | Real | Real | Real |
| Source: | User Enter... | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Dec. Places: | . | . | . | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mean: | 10667.941 | 10427.588 | 10644.882 | 10339.294 | 10656.41 | 10383.44 | 10742.26 | 11543.85 | 2472.941 | 2356.375 | 848.59 | 694.36 | 522.94 |
| Std. Deviation: | 2931.597 | 3608.047 | 2871.018 | 3605.486 | 2885.50 | 3602.07 | 1832.15 | 1504.08 | 422.357 | 284.922 | 411.32 | 247.67 | 387.71 |
| Std. Error: | 711.017 | 875.080 | 696.324 | 874.459 | 699.84 | 873.63 | 444.36 | 364.79 | 102.437 | 71.230 | 99.76 | 61.92 | 107.53 |
| Variance: | 8594262.4... | 13018003.... | 8242743.2... | 1.3E7 | 8326103.63 | 12974880.75 | 3356776.19 | 2262253.09 | 178385.1... | 81180.383 | 169186.89 | 61338.82 | 150320.12 |
| Coeff. of Variation: | .275 | .346 | .270 | .349 | .27 | .35 | .17 | .13 | .171 | .121 | .48 | .36 | .74 |
| Minimum: | 4704 | 5634 | 4598 | 5470 | 4651.00 | 5552.00 | 7185.50 | 8784.50 | 1763 | 1908 | 366.70 | 277.20 | -34.40 |
| Maximum: | 16628 | 17591 | 16800 | 18194 | 16714.00 | 17892.50 | 14535.00 | 14346.00 | 3165 | 3124 | 1578.50 | 1261.60 | 1147.00 |
| Range: | 11924.000 | 11957.000 | 12202.000 | 12724.000 | 12063.00 | 12340.50 | 7349.50 | 5561.50 | 1402.000 | 1216.000 | 1211.80 | 984.40 | 1181.40 |
| Count: | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 16 | 17 | 16 | 13 |
| Missing Cells: | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 8 |
| Sum: | 181355.000 | 177269.000 | 180963.000 | 175768.000 | 181159.00 | 176518.50 | 182618.50 | 196245.50 | 42040.000 | 37702.000 | 14426.00 | 11109.80 | 6798.28 |
| Sum of Squares: | 2072192671 | 2056776187 | 2058213737 | 2025309512 | 2063722557 | 2.04E9 | 2.02E9 | 2.3E9 | 106816610 | 90057756 | 14968724.10 | 8634310.76 | 5358965.41 |

| | RTsc_1 | RTsc_2 | Ltsc_1 | Ltsc_2 | Thi_sc1 | Thi_sc2 | Thi_ar1 | Thi_ar2 | TEE_1 | TEE_2 | EEPA_1 | EEPA_2 | NVAEE_1 |
|----|--------|--------|--------|--------|----------|----------|----------|----------|-------|-------|---------|---------|---------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 12548 | 17591 | 11980 | 18194 | 12264.00 | 17892.50 | 10032.50 | 11630.50 | 2702 | • | 901.80 | • | • |
| 3 | 11614 | 12326 | 11284 | 11829 | 11449.00 | 12077.50 | 11491.00 | 12129.50 | • | • | • | • | • |
| 4 | 9448 | 5963 | 9273 | 5778 | 9360.50 | 5870.50 | 10740.00 | 11272.00 | 3165 | 2302 | 1578.50 | 651.80 | • |
| 5 | 10419 | 6340 | 10567 | 6562 | 10493.00 | 6451.00 | 10328.00 | 10829.50 | 2085 | 2131 | 656.50 | 577.90 | • |
| 6 | 12059 | 11735 | 12257 | 11531 | 12158.00 | 11633.00 | 14535.00 | 14346.00 | 3062 | 2576 | 1575.80 | 1038.40 | 1132.80 |
| 7 | 6626 | 8757 | 6687 | 9004 | 6656.50 | 8880.50 | 9540.00 | 10559.50 | 2334 | 2422 | 570.60 | 619.80 | -34.40 |
| 8 | 4704 | 6714 | 4598 | 6674 | 4651.00 | 6694.00 | 7185.50 | 9416.50 | 1763 | 1908 | 366.70 | 277.20 | • |
| 9 | 10402 | 11296 | 10223 | 11078 | 10312.50 | 11187.00 | 10562.00 | 11479.50 | • | • | • | • | • |
| 10 | 7931 | • | 9195 | • | 8563.00 | • | 8637.00 | • | • | • | • | • | • |
| 11 | • | 16765 | • | 16282 | • | 16523.50 | • | 12245.50 | 2236 | 2513 | 412.40 | 771.70 | 192.40 |
| 12 | • | 12196 | • | 12431 | • | 12313.50 | • | 11858.50 | 2166 | 2122 | 649.40 | 449.80 | 333.40 |
| 13 | 7707 | 12098 | 7487 | 11269 | 7597.00 | 11683.50 | 10727.00 | 10364.50 | 2270 | 2366 | 633.00 | 649.40 | 396.00 |
| 14 | 10728 | 5634 | 10062 | 5470 | 10395.00 | 5552.00 | 10399.00 | 8784.50 | 2274 | 2308 | 646.60 | 607.20 | 127.48 |
| 15 | 11313 | 8610 | 12471 | 8775 | 11892.00 | 8692.50 | 12723.50 | 13826.00 | 3070 | 2496 | 1403.00 | 804.40 | 1147.00 |
| 16 | 9053 | 9539 | 9099 | 9947 | 9076.00 | 9743.00 | 8298.50 | 9744.50 | 1997 | 2020 | 377.30 | 358.00 | 264.30 |
| 17 | 13998 | • | 12654 | • | 13326.00 | • | 10016.00 | • | 2252 | 2263 | 686.80 | 966.70 | 550.80 |
| 18 | 16628 | • | 16800 | • | 16714.00 | • | 12319.00 | • | 2201 | 2423 | 500.90 | 710.70 | 500.90 |
| 19 | • | 6530 | • | 6238 | • | 6384.00 | • | 12017.00 | 2790 | 2148 | 1221.00 | 613.20 | 734.00 |
| 20 | 13065 | 12517 | 13330 | 12461 | 13197.50 | 12489.00 | 12447.00 | 13118.00 | 2846 | 2580 | 1041.40 | 752.00 | 396.40 |
| 21 | 13112 | 12658 | 12996 | 12245 | 13054.00 | 12451.50 | 12637.50 | 12624.00 | 2827 | 3124 | 1204.30 | 1261.60 | 1057.20 |

| | NVAEE_2 | PAL_1 | PAL_2 | Lep_1 | Lep_2 | En_int | Prot_g | CHO_g | Fat_g | Sat_g | Mono_g | Poly_g | Chol_mg | Fiber |
|----------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Type: | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real |
| Source: | User Entered | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Format ... | Free For... | Free For... | Free For... | Free For... | Free For... | Free For... | Free For... | Free For... | Free For... | Free For... | Free For... | Free For... | Free For... |
| Dec. Places: | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mean: | 386.31 | 1.81 | 1.66 | 11.52 | 12.03 | 1891.41 | 62.33 | 266.02 | 62.35 | 21.14 | 23.62 | 12.98 | 153.46 | 17.98 |
| Std. Deviation: | 421.94 | .38 | .22 | 8.34 | 7.31 | 374.05 | 15.42 | 54.37 | 18.33 | 6.81 | 7.43 | 4.30 | 82.84 | 6.33 |
| Std. Error: | 112.77 | .09 | .06 | 2.02 | 1.68 | 90.72 | 3.74 | 13.19 | 4.45 | 1.65 | 1.80 | 1.04 | 20.09 | 1.53 |
| Variance: | 178034.80 | .14 | .05 | 69.49 | 53.40 | 139910.83 | 237.87 | 2956.42 | 336.06 | 46.37 | 55.22 | 18.52 | 6862.09 | 40.03 |
| Coeff. of Variation: | 1.09 | .21 | .13 | .72 | .61 | .20 | .25 | .20 | .29 | .29 | .32 | .31 | .33 | .35 |
| Minimum: | -680.20 | 1.37 | 1.32 | 3.20 | 5.10 | 926.00 | 27.00 | 124.00 | 37.00 | 11.00 | 16.62 | 7.00 | 30.29 | 10.67 |
| Maximum: | 1102.60 | 2.59 | 2.12 | 35.70 | 35.10 | 2751.00 | 92.63 | 346.00 | 102.00 | 38.00 | 40.00 | 24.14 | 318.00 | 36.85 |
| Range: | 1782.80 | 1.22 | .80 | 32.50 | 30.00 | 1825.00 | 65.63 | 222.00 | 65.00 | 27.00 | 23.38 | 17.14 | 287.71 | 26.18 |
| Count: | 14 | 17 | 16 | 17 | 19 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| Missing Cells: | 7 | 4 | 5 | 4 | 2 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Sum: | 5408.40 | 30.78 | 26.58 | 195.80 | 228.60 | 32153.99 | 1059.59 | 4522.39 | 1059.93 | 359.44 | 401.51 | 220.67 | 2608.81 | 305.70 |
| Sum of Squares: | 4403794.52 | 58.01 | 44.88 | 3367.02 | 3711.68 | 6.31E7 | 69848.70 | 1250359.90 | 71462.77 | 8341.80 | 10366.56 | 3160.55 | 510139.14 | 6137.49 |

| | NVAEE_2 | PAL_1 | PAL_2 | Lep_1 | Lep_2 | En_int | Prot_g | CHO_g | Fat_g | Sat_g | Mono_g | Poly_g | Chol_mg | Fiber |
|----|---------|-------|-------|-------|---------|---------|--------|--------|--------|-------|--------|--------|---------|-------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | • | 1.77 | • | 12.20 | 22.30 | 2007.70 | 71.38 | 324.60 | 51.40 | 16.59 | 17.98 | 13.35 | 92.98 | 25.60 |
| 3 | • | • | 8.10 | 8.30 | 1918.00 | 73.00 | 290.00 | 43.00 | 12.00 | 17.00 | 10.00 | 55.00 | 19.00 | • |
| 4 | • | 2.49 | 1.62 | 6.00 | • | 2036.47 | 70.48 | 333.76 | 51.54 | 19.46 | 16.93 | 10.69 | 175.32 | 20.55 |
| 5 | 461.90 | 1.71 | 1.59 | • | 8.20 | 1631.07 | 56.39 | 236.65 | 48.48 | 17.52 | 16.62 | 9.30 | 135.76 | 14.50 |
| 6 | 799.20 | 2.59 | 2.01 | • | 15.30 | 2016.20 | 92.63 | 234.29 | 78.81 | 26.30 | 31.18 | 14.03 | 303.40 | 19.61 |
| 7 | -680.20 | 1.53 | 1.55 | 4.00 | 6.90 | 1680.05 | 42.53 | 258.62 | 56.94 | 22.81 | 20.27 | 10.31 | 103.74 | 14.16 |
| 8 | • | 1.45 | 1.32 | 3.20 | 5.30 | 926.00 | 27.00 | 124.00 | 37.00 | 11.00 | 17.00 | 7.00 | 48.00 | 11.00 |
| 9 | • | • | • | 35.70 | 35.10 | 1836.00 | 82.00 | 214.00 | 72.00 | 24.00 | 27.00 | 16.00 | 318.00 | 16.00 |
| 10 | • | • | • | 19.70 | 13.90 | • | • | • | • | • | • | • | • | • |
| 11 | 573.50 | 1.40 | 1.69 | 11.10 | 16.50 | 1956.43 | 56.37 | 286.73 | 70.95 | 23.01 | 29.70 | 12.63 | 120.58 | 14.37 |
| 12 | 250.80 | 1.67 | 1.45 | 22.70 | 17.80 | • | • | • | • | • | • | • | • | • |
| 13 | 214.40 | 1.61 | 1.60 | 15.90 | 11.40 | • | • | • | • | • | • | • | • | • |
| 14 | 1.20 | 1.62 | 1.57 | 6.00 | 8.20 | 1713.07 | 51.79 | 244.46 | 51.54 | 21.50 | 17.17 | 9.24 | 177.23 | 18.73 |
| 15 | 557.40 | 2.26 | 1.73 | • | 8.20 | 2020.31 | 62.75 | 253.05 | 77.53 | 23.18 | 31.04 | 17.73 | 182.98 | 12.78 |
| 16 | 267.00 | 1.37 | 1.38 | 13.70 | 12.20 | 2259.13 | 68.51 | 283.54 | 98.53 | 32.45 | 36.08 | 24.14 | 131.33 | 10.67 |
| 17 | 787.70 | 1.68 | 2.12 | 5.90 | 5.10 | 1804.21 | 55.35 | 270.44 | 55.53 | 19.90 | 20.58 | 10.94 | 94.79 | 17.60 |
| 18 | 211.70 | 1.49 | 1.65 | 6.80 | 9.10 | 1891.99 | 57.71 | 308.02 | 53.39 | 14.20 | 22.53 | 12.70 | 30.29 | 36.85 |
| 19 | 337.20 | 2.16 | 1.63 | 4.70 | 5.10 | 2171.70 | 70.95 | 302.94 | 52.59 | 19.06 | 20.08 | 8.86 | 213.17 | 17.41 |
| 20 | 524.00 | 1.87 | 1.64 | 12.00 | 12.30 | 1534.67 | 49.73 | 211.29 | 58.70 | 18.46 | 20.36 | 15.76 | 203.25 | 13.86 |
| 21 | 1102.60 | 2.11 | 2.02 | 8.10 | 7.40 | 2751.00 | 71.00 | 346.00 | 102.00 | 38.00 | 40.00 | 18.00 | 223.00 | 23.00 |

| | Per_Pro | per_CHO | per_Fat | Fat_Sat | Fat_Man | Fat_Pol | Input Column |
|----------------------|--------------|----------------|--------------|--------------|--------------|--------------|-------------------|
| Type: | Real | Real | Real | Real | Real | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Form... | Free Format... | Free Form... | Free Form... | Free Form... | Free Form... | Free Format Fixed |
| Dec. Places: | 2 | 2 | 2 | 2 | 2 | 2 | 3 |
| Mean: | .13 | .57 | .30 | .34 | .37 | .21 | . |
| Std. Deviation: | .02 | .07 | .06 | .04 | .04 | .03 | . |
| Std. Error: | .01 | .02 | .01 | .01 | .01 | .01 | . |
| Variance: | 5.08E-4 | 4.37E-3 | 3.17E-3 | 1.61E-3 | 1.30E-3 | 1.03E-3 | . |
| Coeff. of Variation: | .17 | .12 | .19 | .12 | .10 | .16 | . |
| Minimum: | .10 | .46 | .22 | .27 | .33 | .17 | . |
| Maximum: | .18 | .67 | .39 | .42 | .46 | .27 | . |
| Range: | .08 | .21 | .17 | .15 | .13 | .10 | . |
| Count: | 17 | 17 | 17 | 17 | 17 | 17 | . |
| Missing Cells: | 4 | 4 | 4 | 4 | 4 | 4 | . |
| Sum: | 2.21 | 9.66 | 5.07 | 5.84 | 6.37 | 3.49 | . |
| Sum of Squares: | 30 | 5.56 | 1.56 | 2.03 | 2.41 | 73 | . |

| | Per_Pro | per_CHO | per_Fat | Fat_Sat | Fat_Mon | Fat_Pol | Input_Column |
|----|---------|---------|---------|---------|---------|---------|--------------|
| 1 | • | • | • | • | • | • | • |
| 2 | .14 | .65 | .23 | .32 | .35 | .26 | |
| 3 | .12 | .67 | .22 | .38 | .34 | .19 | |
| 4 | .14 | .66 | .23 | .38 | .33 | .21 | |
| 5 | .14 | .58 | .27 | .36 | .34 | .19 | |
| 6 | .18 | .46 | .35 | .33 | .40 | .18 | |
| 7 | .10 | .62 | .31 | .40 | .36 | .18 | |
| 8 | .12 | .54 | .36 | .29 | .46 | .19 | |
| 9 | .18 | .47 | .35 | .33 | .37 | .22 | |
| 10 | • | • | • | • | • | • | |
| 11 | .12 | .59 | .33 | .32 | .42 | .18 | |
| 12 | • | • | • | • | • | • | |
| 13 | • | • | • | • | • | • | |
| 14 | .12 | .57 | .27 | .42 | .33 | .18 | |
| 15 | .12 | .50 | .35 | .30 | .40 | .23 | |
| 16 | .12 | .50 | .39 | .33 | .37 | .25 | |
| 17 | .12 | .60 | .28 | .36 | .37 | .20 | |
| 18 | .12 | .65 | .25 | .27 | .42 | .24 | |
| 19 | .13 | .56 | .22 | .36 | .38 | .17 | |
| 20 | .13 | .55 | .34 | .31 | .35 | .27 | |
| 21 | .10 | .50 | .33 | .37 | .39 | .17 | |

| | DOB | Age | Ethnic | group | orcon | Start | Situation | Status | Pre Date | Post Date | MONW | Geno # | Geno | LMP_1 | LMP_2 |
|----------------------|------------|-------------|------------|------------|------------|-------------|--------------|--------------|---------------|--------------|-------------|-------------|-------------|-------------|-------------|
| Type: | Date/Ti... | Integer | String | Integer | Integer | Date/T... | String | Integer | Date/Time | Date/Time | Integer | Integer | String | Date/Tim... | Date/Time |
| Source: | User E... | User Ent... | User En... | User En... | User En... | User Ent... | User Entered | User Entered | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... |
| Class: | Continu... | Nominal | Continu... | Continu... | Continu... | Nominal | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | 12/31/99 | . | . | . | . | 12/31/99 | . | 12/31/99 | . | 12/31/99 | . | . | . | 12/31/99 | 12/31/99 |
| Dec. Places: | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Mean: | 2.05E9 | 28.150 | . | 3.000 | .450 | 2.95E9 | . | 2.000 | 2953126080 | 2973028320 | 1.900 | 518.824 | . | 29808296... | 2989425... |
| Std. Deviation: | 1.42E8 | 4.368 | . | 0.000 | .510 | 1.851E7 | . | 0.000 | 18165578.5... | 18269925.185 | .308 | 215.887 | . | 2.234E7 | 2.503E7 |
| Std. Error: | 3.175E7 | .977 | . | 0.000 | .114 | 4.14E6 | . | 0.000 | 4061946.839 | 4085279.466 | .069 | 52.360 | . | 1.117E7 | 1.022E7 |
| Variance: | 2.016E... | 19.082 | . | 0.000 | .261 | 3.428E... | . | 0.000 | 3.300E14 | 3.338E14 | .095 | 46607.154 | . | 4.991E14 | 6.267E14 |
| Coeff. of Variation: | 6.929E-2 | .155 | . | 0.000 | 1.134 | 6.270E-3 | . | 0.000 | 6.151E-3 | 6.145E-3 | .162 | .416 | . | 7.494E-3 | 8.374E-3 |
| Minimum: | 9/21/61 | 20 | 3 | 0 | 1/10/97 | 2 | 2/10/97 | 8/15/97 | 1 | 1 | 294 | | | 5/27/97 | 12/30/97 |
| Maximum: | 12/3/76 | 35 | 3 | 1 | 12/11/98 | 2 | 12/29/98 | 7/15/99 | 2 | 2 | 957 | | | 11/10/98 | 7/1/99 |
| Range: | 4.8E8 | 15,000 | . | 0.000 | 1,000 | 60480... | . | 0.000 | 57024000.0... | 60393600.000 | 1,000 | 663,000 | . | 45964800 | 47865600 |
| Count: | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 17 | 17 | 4 | 6 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 4 | 17 | 15 |
| Sum: | 4.1E10 | 563,000 | . | 60,000 | 9,000 | 5.91E10 | . | 40,000 | 59062521600 | 59460566400 | 38,000 | 8820,000 | . | 1.19E10 | 1.79E10 |
| Sum of Squares: | 8.439E... | 16211 | . | 180,000 | 9,000 | 1.744E... | . | 80,000 | 1.744E20 | 1.768E20 | 74,000 | 5321738.... | . | 3.555E19 | 5.362E19 |

Control Group N=20

| | DOB | Age | Ethnic | group | orcon | Start | Situation | Status | Pre Date | Post Date | MONW | Geno # | Geno | LMP_1 | LMP_2 |
|----|----------|-----|--------|-------|-------|-------|-----------|-----------|----------|-----------|----------|--------|------|-------|----------|
| 1 | | • | | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 5/25/63 | 33 | w | | 3 | 0 | 5/19/97 | done-paid | 2 | 5/9/97 | 12/11/97 | 2 | 448 | 11 | • |
| 3 | 3/13/75 | 22 | w | | 3 | 1 | 6/ 9/97 | done-paid | 2 | 5/29/97 | 12/19/97 | 2 | 464 | 11 | • |
| 4 | 11/25/65 | 31 | w | | 3 | 0 | 3/20/97 | done-paid | 2 | 3/10/97 | 9/19/97 | 2 | • | • | • |
| 5 | 6/4/67 | 29 | w | | 3 | 1 | 5/12/97 | done-paid | 2 | 5/ 2/97 | 4/ 9/98 | 2 | 447 | 11 | • |
| 6 | 10/13/70 | 26 | w | | 3 | 0 | 2/2/97 | done-paid | 2 | 2/17/97 | 8/15/97 | 2 | 296 | 11 | • |
| 7 | 8/23/63 | 33 | w | | 3 | 0 | 8/11/97 | done-paid | 2 | 8/ 1/97 | 3/ 5/98 | 2 | 458 | 12 | • |
| 8 | 12/3/76 | 20 | a | | 3 | 0 | 3/31/97 | done-paid | 2 | 3/21/97 | 12/30/97 | 2 | 458 | 12 | • |
| 9 | 9/11/73 | 24 | w | | 3 | 0 | 1/10/97 | done-paid | 2 | 8/26/97 | 3/ 6/98 | 2 | 486 | 11 | • |
| 10 | 9/21/61 | 35 | w | | 3 | 0 | 6/16/97 | done-paid | 2 | 6/ 5/97 | 1/22/98 | 2 | 466 | 11 | • |
| 11 | 2/19/68 | 29 | w | | 3 | 1 | 4/25/97 | done-paid | 2 | 4/15/97 | 11/25/97 | 2 | • | • | • |
| 12 | 8/30/70 | 28 | w | | 3 | 1 | 11/20/98 | done-paid | 2 | 11/20/98 | 6/23/99 | 1 | 957 | 11 | 11/10/98 |
| 13 | 8/26/68 | 28 | w | | 3 | 0 | 3/17/97 | done-paid | 2 | 3/ 6/97 | 11/11/97 | 2 | 294 | 11 | • |
| 14 | 5/ 1/75 | 22 | w | | 3 | 1 | 8/ 1/97 | done-paid | 2 | 7/23/97 | 2/27/98 | 2 | 477 | 11 | • |
| 15 | 10/16/63 | 33 | w | | 3 | 1 | 3/28/97 | done-paid | 2 | 3/18/97 | 1/ 6/98 | 2 | 308 | 12 | • |
| 16 | 11/13/67 | 29 | w | | 3 | 1 | 6/23/97 | done-paid | 2 | 6/13/97 | 1/23/98 | 1 | 476 | 11 | 5/27/97 |
| 17 | 1/3/66 | 32 | w | | 3 | 0 | 12/11/98 | done-paid | 2 | 12/2/98 | 6/24/99 | 2 | 952 | 11 | 11/7/98 |
| 18 | 3/19/64 | 33 | w | | 3 | 0 | 6/16/97 | done-paid | 2 | 6/ 6/97 | 1/13/98 | 2 | 427 | 11 | • |
| 19 | 8/14/71 | 27 | w | | 3 | 1 | 1/1/98 | done-paid | 2 | 10/19/98 | 7/15/99 | 2 | 945 | 11 | 9/24/98 |
| 20 | 6/30/73 | 23 | w | | 3 | 0 | 6/30/97 | done-paid | 2 | 6/19/97 | 1/29/98 | 2 | 461 | 11 | 1/ 3/98 |
| 21 | 6/22/70 | 26 | w | | 3 | 1 | 2/21/97 | done-paid | 2 | 2/10/97 | 9/ 4/97 | 2 | • | • | • |

| | fh_dm | height1 | weight1 | BMI1 | height2 | weight2 | BMI2 | sbp_1 | sbp_2 | dbp_1 | dbp_2 | BMD total (g/cm2) | BMD total 2 |
|----------------------|-------------|--------------|--------------|-------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|
| Type: | Integer | Real | Real | Real | Real | Real | Real | Integer | Real | Real | Real | Real | - |
| Source: | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User E... | User Ent... | User Ent... | User Ent... | User Ent... | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuo... | Continuo... | Continuo... | Continuo... | Continuo... | Continuo... | Continuo... | Continuo... | Continuous | Continuous |
| Format: | * | Free Form... | Free Form... | Free F... | Free Form... | Free Form... | Free F... | * | * | * | * | Free Format Fixed | Free Format Fi... |
| Dec. Places: | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mean: | 250 | 165.130 | 60.420 | 22.111 | 165.260 | 61.203 | 22.343 | 117.900 | * | 71.950 | * | 1.184 | 1.183 |
| Std. Deviation: | .444 | 7.119 | 7.352 | 1.737 | 6.917 | 8.391 | 2.098 | 11.040 | * | 8.733 | * | .074 | .086 |
| Std. Error: | .099 | 1.592 | 1.644 | .388 | 1.547 | 1.876 | .469 | 2.469 | * | 1.953 | * | .017 | .019 |
| Variance: | .197 | 50.680 | 54.046 | 3.018 | 47.840 | 70.413 | 4.402 | 121.884 | * | 76.261 | * | .006 | .007 |
| Coeff. of Variation: | 1.777 | .043 | .122 | .079 | .042 | .137 | .094 | .094 | * | .121 | * | .063 | .073 |
| Minimum: | 0 | 152.000 | 50.000 | 19.133 | 152.000 | 49.300 | 18.944 | 105 | * | 55 | * | 1.047 | 1.000 |
| Maximum: | 1 | 175.400 | 78.000 | 25.469 | 175.400 | 77.200 | 26.095 | 147 | * | 87 | * | 1.319 | 1.379 |
| Range: | 1.000 | 23.400 | 28.000 | 6.337 | 23.400 | 27.900 | 7.151 | 42.000 | * | 32.000 | * | .272 | .379 |
| Count: | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 0 | 20 | 20 | 20 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 21 | 1 | 21 | 1 | 1 | 1 |
| Sum: | 5.000 | 3302.600 | 1208.400 | 442.225 | 3305.200 | 1224.050 | 446.858 | 2358.000 | 0.000 | 1439.000 | 0.000 | 23.674 | 23.657 |
| Sum of Squares: | 5.000 | 546321.260 | 74038.400 | 9835.476 | 547126.320 | 76252.762 | 10067.... | 280324.0... | 0.000 | 104985.0... | 0.000 | 28.128 | 28.124 |

| | fl_dm | height1 | weight1 | BMI1 | height2 | weight2 | BMI2 | sbp_1 | sbp_2 | dbp_1 | dbp_2 | BMD total (g/cm2) | BMD total 2 |
|----|-------|---------|---------|--------|---------|---------|--------|-------|-------|-------|-------|-------------------|-------------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 0 | 162.000 | 52.500 | 20.005 | 161.600 | 52.900 | 20.257 | 105 | • | 73 | • | 1.160 | 1.179 |
| 3 | 0 | 163.000 | 55.000 | 20.701 | 163.000 | 55.300 | 20.814 | 115 | • | 72 | • | 1.135 | 1.110 |
| 4 | 0 | 152.000 | 50.000 | 21.641 | 152.000 | 49.500 | 21.425 | 123 | • | 87 | • | 1.074 | 1.229 |
| 5 | 1 | 168.000 | 54.000 | 19.133 | 168.000 | 56.800 | 20.125 | 105 | • | 74 | • | 1.047 | 1.086 |
| 6 | 0 | 165.000 | 54.100 | 19.871 | 164.400 | 51.200 | 18.944 | 133 | • | 86 | • | 1.226 | 1.238 |
| 7 | 0 | 154.600 | 50.400 | 21.087 | 158.200 | 49.300 | 19.699 | 108 | • | 77 | • | 1.155 | 1.134 |
| 8 | 1 | 156.300 | 58.300 | 23.864 | 156.400 | 59.200 | 24.202 | 116 | • | 65 | • | 1.146 | 1.172 |
| 9 | 0 | 162.400 | 56.700 | 21.499 | 161.600 | 53.400 | 20.448 | 114 | • | 77 | • | 1.156 | 1.139 |
| 10 | 0 | 174.500 | 63.600 | 20.887 | 175.000 | 66.000 | 21.551 | 115 | • | 65 | • | 1.257 | 1.267 |
| 11 | 1 | 168.000 | 59.800 | 21.188 | 168.000 | 59.250 | 20.993 | 126 | • | 71 | • | 1.319 | 1.379 |
| 12 | 0 | 165.400 | 60.400 | 22.078 | 166.000 | 61.500 | 22.318 | 131 | • | 69 | • | 1.170 | 1.156 |
| 13 | 0 | 175.000 | 78.000 | 25.469 | 175.000 | 74.400 | 24.294 | 120 | • | 78 | • | 1.207 | 1.218 |
| 14 | 1 | 172.400 | 70.100 | 23.585 | 172.400 | 73.000 | 24.561 | 122 | • | 78 | • | 1.179 | 1.188 |
| 15 | 0 | 172.600 | 69.400 | 23.296 | 172.000 | 77.200 | 26.095 | 105 | • | 55 | • | 1.260 | 1.286 |
| 16 | 0 | 159.400 | 61.500 | 24.205 | 159.400 | 64.000 | 25.189 | 109 | • | 57 | • | 1.052 | 1.070 |
| 17 | 0 | 167.800 | 69.900 | 24.825 | 168.000 | 71.000 | 25.156 | 110 | • | 69 | • | 1.208 | 1.164 |
| 18 | 1 | 166.800 | 62.200 | 22.360 | 166.800 | 61.300 | 22.033 | 147 | • | 85 | • | 1.283 | 1.286 |
| 19 | 0 | 175.400 | 64.400 | 20.933 | 175.400 | 66.000 | 21.453 | 128 | • | 66 | • | 1.192 | 1.205 |
| 20 | 0 | 154.400 | 56.000 | 23.491 | 154.400 | 56.500 | 23.700 | 109 | • | 64 | • | 1.172 | 1.151 |
| 21 | 0 | 167.600 | 62.100 | 22.108 | 167.600 | 66.300 | 23.603 | 117 | • | 71 | • | 1.276 | 1.000 |

| | BMC tot (g) | BMC tot 2 | BMC trunk | BMC trunk2 | BMC arms | BMC arms2 | BMC legs | BMC legs2 | BMD spine | BMD spine2 |
|----------------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Type: | Integer | Integer | Integer | Integer | Integer | Integer | Integer | Integer | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | . | . | . | . | . | . | . | . | . | . |
| Dec. Places: | . | . | . | . | . | . | . | . | 3 | 3 |
| Mean: | 2641.700 | 2678.500 | 906.200 | 941.750 | 330.400 | 325.500 | 836.550 | 899.700 | 1.224 | 1.268 |
| Std. Deviation: | 352.489 | 360.757 | 164.369 | 149.601 | 47.479 | 55.710 | 125.949 | 135.651 | .132 | .154 |
| Std. Error: | 78.819 | 80.668 | 36.754 | 33.452 | 10.617 | 12.457 | 28.163 | 30.333 | .029 | .034 |
| Variance: | 124248.432 | 130145.737 | 27017.116 | 22380.408 | 2254.253 | 3103.632 | 15863.208 | 18401.274 | .017 | .024 |
| Coeff. of Variation: | .133 | .135 | .181 | .159 | .144 | .171 | .151 | .151 | .108 | .121 |
| Minimum: | 2027 | 2096 | 627 | 732 | 250 | 240 | 645 | 677 | .941 | 1.059 |
| Maximum: | 3076 | 3157 | 1163 | 1137 | 406 | 438 | 1052 | 1070 | 1.522 | 1.572 |
| Range: | 1049.000 | 1061.000 | 536.000 | 405.000 | 156.000 | 198.000 | 407.000 | 393.000 | .581 | .513 |
| Count: | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 52834.000 | 53570.000 | 18124.000 | 18835.000 | 6608.000 | 6510.000 | 16731.000 | 17994.000 | 24.481 | 25.368 |
| Sum of Squares: | 141932298.000 | 145960014.000 | 16937294.000 | 18163089.000 | 2226114.000 | 2177974.000 | 14297719.000 | 16538826.000 | 30.295 | 32.628 |

| | BMC tot (g) | BMC tot 2 | BMC trunk | BMC trunk2 | BMC arms | BMC arms2 | BMC legs | BMC legs2 | BMD spine | BMD spine2 |
|----|-------------|-----------|-----------|------------|----------|-----------|----------|-----------|-----------|------------|
| 1 | * | * | * | * | * | * | * | * | * | * |
| 2 | 2497 | 2536 | 779 | 831 | 335 | 299 | 809 | 815 | 1.164 | 1.059 |
| 3 | 2441 | 2406 | 783 | 815 | 300 | 274 | 857 | 832 | 1.111 | 1.061 |
| 4 | 2233 | 2198 | 677 | 744 | 265 | 258 | 752 | 738 | 1.196 | 1.221 |
| 5 | 2131 | 2242 | 627 | 732 | 267 | 266 | 751 | 755 | .941 | 1.091 |
| 6 | 2647 | 2667 | 860 | 853 | 352 | 339 | 761 | 908 | 1.219 | 1.138 |
| 7 | 2137 | 2177 | 706 | 799 | 264 | 240 | 729 | 711 | 1.116 | 1.254 |
| 8 | 2456 | 2575 | 859 | 935 | 288 | 298 | 761 | 828 | 1.186 | 1.184 |
| 9 | 2543 | 2536 | 842 | 902 | 324 | 298 | 885 | 869 | 1.160 | 1.273 |
| 10 | 3066 | 3091 | 1047 | 1092 | 384 | 381 | 1052 | 1037 | 1.407 | 1.204 |
| 11 | 3076 | 3157 | 1163 | 1137 | 386 | 438 | 761 | 1013 | 1.522 | 1.492 |
| 12 | 2502 | 2527 | 848 | 864 | 289 | 274 | 858 | 874 | 1.190 | 1.129 |
| 13 | 2861 | 2800 | 985 | 922 | 351 | 363 | 761 | 1033 | 1.117 | 1.180 |
| 14 | 2914 | 3015 | 1035 | 1133 | 364 | 353 | 1021 | 1042 | 1.235 | 1.438 |
| 15 | 3033 | 3155 | 1093 | 1134 | 350 | 341 | 761 | 1070 | 1.381 | 1.572 |
| 16 | 2027 | 2096 | 719 | 754 | 250 | 255 | 645 | 677 | 1.082 | 1.174 |
| 17 | 3054 | 3092 | 1119 | 1118 | 374 | 375 | 1015 | 1049 | 1.330 | 1.353 |
| 18 | 2954 | 2922 | 1030 | 1004 | 367 | 356 | 1045 | 1044 | 1.227 | 1.300 |
| 19 | 2982 | 3034 | 1082 | 1135 | 372 | 357 | 1018 | 1015 | 1.343 | 1.398 |
| 20 | 2368 | 2355 | 817 | 834 | 320 | 328 | 728 | 706 | 1.233 | 1.319 |
| 21 | 2912 | 2989 | 1053 | 1097 | 406 | 417 | 761 | 978 | 1.321 | 1.528 |

| | BMD pelvis | BMD pelvis2 | total ca++ | total ca++2 | Tis_Fa1 | Tis_Fa2 | Regn % fat | Regn % fat2 | F_mass1 | F_mass2 | FF_m1 |
|----------------------|------------------|--------------|--------------|--------------|--------------|--------------|--------------------|--------------------|-----------------|-----------------|-----------------|
| Type: | Real | Real | Integer | Real | Real | Real | Real | Real | Real | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Format F... | * | * | Free Form... | Free Form... | Free Form... | Free Format Fix... | Free Format Fix... | Free Format ... | Free Format ... | Free Format ... |
| Dec. Places: | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Mean: | 1.165 | 1.172 | 1002.700 | 1017.750 | 28.545 | 28.760 | 27.310 | 27.555 | 16.86 | 17.07 | 41.07 |
| Std. Deviation: | .103 | .099 | 135.376 | 137.182 | 6.620 | 6.672 | 6.453 | 6.424 | 5.97 | 5.99 | 4.08 |
| Std. Error: | .023 | .022 | 30.271 | 30.675 | 1.480 | 1.492 | 1.443 | 1.436 | 1.34 | 1.34 | .91 |
| Variance: | .011 | .010 | 18326.747 | 18818.829 | 43.829 | 44.517 | 41.641 | 41.268 | 35.89 | 35.89 | 16.64 |
| Coeff. of Variation: | .089 | .084 | .135 | .135 | .232 | .232 | .236 | .233 | .35 | .35 | .10 |
| Minimum: | .964 | .986 | 770 | 796 | 17.80 | 18.000 | 16.900 | 17.100 | 10.41 | 9.20 | 34.48 |
| Maximum: | 1.340 | 1.381 | 1169 | 1200 | 44.30 | 41.400 | 42.700 | 39.800 | 33.49 | 29.25 | 48.11 |
| Range: | .376 | .395 | 399.000 | 404.000 | 26.500 | 23.400 | 25.800 | 22.700 | 23.08 | 20.04 | 13.63 |
| Count: | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 23.292 | 23.444 | 20054.000 | 20355.000 | 570.900 | 575.200 | 546.200 | 551.100 | 337.24 | 341.39 | 821.41 |
| Sum of Squares: | 27.328 | 27.667 | 20456354.000 | 21073859.000 | 17129.090 | 17388.580 | 15707.900 | 15969.650 | 6364.62 | 6509.39 | 34052.09 |

| | BMD pelvis | BMD pelvis2 | total ca++ | total ca++2 | Tis_Fa1 | Tis_Fa2 | Regn % fat | Regn % fat2 | F_mass1 | F_mass2 | FF_m1 |
|----|------------|-------------|------------|-------------|---------|---------|------------|-------------|---------|---------|-------|
| 1 | * | * | * | * | * | * | * | * | * | * | * |
| 2 | 1.070 | 1.091 | 949 | 964 | 24,600 | 25,500 | 23,400 | 24,300 | 12,24 | 12,70 | 37.53 |
| 3 | 1.026 | 1.036 | 928 | 914 | 22,400 | 22,800 | 21,400 | 21,800 | 11,68 | 11,96 | 40.44 |
| 4 | 1.075 | 1.112 | 826 | 835 | 27,600 | 27,000 | 26,400 | 25,800 | 13,13 | 12,74 | 34.48 |
| 5 | .964 | .986 | 810 | 852 | 28,800 | 29,700 | 27,600 | 28,500 | 14,86 | 16,09 | 36.80 |
| 6 | 1.119 | 1.134 | 1006 | 1013 | 22,900 | 23,000 | 21,700 | 21,800 | 11,68 | 11,10 | 39.40 |
| 7 | 1.121 | 1.098 | 812 | 827 | 23,600 | 23,800 | 22,600 | 22,800 | 11,16 | 11,21 | 36.17 |
| 8 | 1.139 | 1.166 | 933 | 978 | 26,900 | 27,500 | 25,800 | 26,300 | 14,71 | 15,21 | 39.91 |
| 9 | 1.159 | 1.158 | 966 | 964 | 21,200 | 18,000 | 20,200 | 17,100 | 11,07 | 9,20 | 41.25 |
| 10 | 1.297 | 1.271 | 1165 | 1174 | 26,900 | 27,100 | 25,600 | 25,900 | 16,15 | 17,22 | 43.88 |
| 11 | 1.310 | 1.313 | 1169 | 1200 | 23,600 | 21,800 | 22,400 | 20,600 | 13,45 | 12,32 | 43.47 |
| 12 | 1.091 | 1.123 | 951 | 960 | 36,600 | 32,100 | 35,100 | 30,800 | 22,11 | 18,76 | 38.30 |
| 13 | 1.171 | 1.200 | 1087 | 1064 | 44,300 | 41,400 | 42,700 | 39,800 | 33,49 | 29,25 | 42.10 |
| 14 | 1.267 | 1.260 | 1107 | 1146 | 32,800 | 35,300 | 31,400 | 33,800 | 21,40 | 24,09 | 43.86 |
| 15 | 1.251 | 1.249 | 1153 | 1199 | 33,800 | 39,100 | 32,400 | 37,500 | 23,97 | 28,43 | 46.88 |
| 16 | 1.050 | 1.043 | 770 | 796 | 38,800 | 39,000 | 37,500 | 37,700 | 22,77 | 23,73 | 35.93 |
| 17 | 1.163 | 1.175 | 1160 | 1175 | 34,200 | 33,000 | 32,700 | 31,600 | 23,38 | 22,41 | 44.98 |
| 18 | 1.266 | 1.255 | 1123 | 1110 | 17,800 | 19,700 | 16,900 | 19,700 | 10,41 | 12,20 | 48.11 |
| 19 | 1.236 | 1.219 | 1133 | 1153 | 23,900 | 27,300 | 22,800 | 26,000 | 14,96 | 17,07 | 47.67 |
| 20 | 1.177 | 1.174 | 900 | 895 | 29,600 | 27,100 | 28,400 | 25,900 | 15,83 | 13,86 | 37.60 |
| 21 | 1.340 | 1.381 | 1106 | 1136 | 30,600 | 35,000 | 29,200 | 33,400 | 18,78 | 21,84 | 42.65 |

| | FF_m2 | LTM trunk | LTM trunkk.2 | LTM arms | LTM arms2 | LTM legs | LTM legs2 | Appen_1 | Appen_2 | FM_tr | FM_tr2 | FM_arms |
|----------------------|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Type: | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free For... | Free Formal Fi... | Free Formal Fi... | Free Format Fi... | Free Format Fi... | Free Format Fi... | Free Format Fi... | Free Format Fi... | Free Format Fi... | Free Format Fi... | Free Format Fi... | Free Format Fi... |
| Dec. Places: | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mean: | 40.90 | 19.05 | 19.99 | 4.66 | 4.41 | 14.27 | 14.08 | 18.94 | 18.49 | 6.86 | 7.19 | 1.68 |
| Std. Deviation: | 3.80 | 2.34 | 1.65 | .63 | .67 | 1.63 | 1.72 | 2.20 | 2.29 | 2.73 | 2.79 | .83 |
| Std. Error: | .85 | .52 | .37 | .14 | .15 | .36 | .38 | .49 | .51 | .61 | .62 | .18 |
| Variance: | 14.46 | 5.48 | 2.72 | .40 | .45 | 2.66 | 2.95 | 4.84 | 5.25 | 7.43 | 7.78 | .68 |
| Coeff. of Variation: | .09 | .12 | .08 | .14 | .15 | .11 | .12 | .12 | .12 | .40 | .39 | .49 |
| Minimum: | 34.48 | 13.22 | 17.39 | 3.76 | 3.38 | 11.88 | 10.87 | 15.64 | 14.35 | 3.82 | 3.30 | .77 |
| Maximum: | 46.77 | 22.42 | 22.77 | 5.69 | 5.41 | 18.13 | 16.85 | 23.68 | 22.04 | 13.73 | 13.59 | 4.04 |
| Range: | 12.29 | 9.20 | 5.38 | 1.93 | 2.03 | 6.25 | 5.98 | 8.04 | 7.69 | 9.91 | 10.28 | 3.27 |
| Count: | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sum: | 818.00 | 380.99 | 399.74 | 93.26 | 88.16 | 285.45 | 281.58 | 378.71 | 369.74 | 137.23 | 143.74 | 33.63 |
| Sum Of Squares: | 33730.61 | 7361.97 | 8041.22 | 442.46 | 397.10 | 4124.73 | 4020.57 | 7263.13 | 6935.26 | 1082.85 | 1180.85 | 69.48 |

| | FF_m2 | LTM trunk | LTM trunk,2 | LTM arms | LTM arms2 | LTM legs | LTM legs2 | Appen_1 | Appen_2 | FM_tr | FM_tr2 | FM_arms |
|----|-------|-----------|-------------|----------|-----------|----------|-----------|---------|---------|-------|--------|---------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 37.03 | 17.45 | 18.02 | 4.33 | 3.69 | 13.37 | 13.04 | 17.70 | 16.73 | 3.82 | 4.21 | .96 |
| 3 | 40.55 | 18.74 | 20.31 | 4.40 | 3.96 | 14.47 | 13.66 | 18.88 | 17.63 | 4.62 | 4.93 | .77 |
| 4 | 34.48 | 15.98 | 17.57 | 3.76 | 3.48 | 11.88 | 10.87 | 15.64 | 14.35 | 6.04 | 6.52 | 1.43 |
| 5 | 38.08 | 17.17 | 19.25 | 4.08 | 3.85 | 13.33 | 13.17 | 17.41 | 17.02 | 4.25 | 5.25 | 1.47 |
| 6 | 37.19 | 19.22 | 18.07 | 4.21 | 3.79 | 12.73 | 12.28 | 16.94 | 16.07 | 4.95 | 4.66 | 1.23 |
| 7 | 35.83 | 17.51 | 18.69 | 3.89 | 3.38 | 12.29 | 11.40 | 16.18 | 14.77 | 4.69 | 5.31 | 1.38 |
| 8 | 40.09 | 18.70 | 19.45 | 4.32 | 4.28 | 14.07 | 13.72 | 18.39 | 18.00 | 6.75 | 6.93 | 1.03 |
| 9 | 42.06 | 19.46 | 21.11 | 4.27 | 3.96 | 14.81 | 14.37 | 19.08 | 18.33 | 4.00 | 3.30 | .90 |
| 10 | 46.26 | 20.44 | 22.77 | 5.02 | 5.06 | 15.65 | 15.88 | 20.66 | 20.94 | 6.43 | 6.79 | 1.49 |
| 11 | 44.25 | 22.41 | 21.66 | 4.38 | 5.24 | 13.26 | 14.41 | 17.64 | 19.65 | 6.71 | 5.35 | .96 |
| 12 | 39.67 | 19.17 | 20.19 | 4.04 | 3.65 | 12.69 | 13.32 | 16.73 | 16.97 | 10.29 | 9.12 | 2.16 |
| 13 | 41.39 | 19.43 | 19.25 | 5.27 | 4.88 | 15.45 | 15.38 | 20.72 | 20.26 | 13.73 | 11.61 | 4.04 |
| 14 | 44.23 | 21.10 | 21.33 | 5.08 | 4.74 | 15.23 | 16.11 | 20.31 | 20.84 | 6.76 | 9.83 | 2.29 |
| 15 | 44.28 | 21.72 | 21.37 | 5.69 | 5.05 | 16.62 | 15.17 | 22.31 | 20.22 | 10.45 | 13.59 | 2.76 |
| 16 | 37.10 | 17.39 | 18.14 | 3.99 | 3.98 | 12.72 | 13.33 | 16.72 | 17.31 | 9.43 | 10.21 | 2.77 |
| 17 | 45.44 | 22.42 | 21.04 | 5.19 | 5.41 | 14.93 | 16.63 | 20.11 | 22.04 | 9.96 | 8.34 | 2.24 |
| 18 | 46.77 | 13.22 | 22.29 | 5.56 | 5.25 | 16.35 | 16.21 | 21.92 | 21.45 | 4.25 | 5.10 | .89 |
| 19 | 45.54 | 21.93 | 21.68 | 5.55 | 4.96 | 18.13 | 16.85 | 23.68 | 21.82 | 4.72 | 6.01 | 1.45 |
| 20 | 37.20 | 17.26 | 17.39 | 4.74 | 4.60 | 13.21 | 12.79 | 17.95 | 17.39 | 6.72 | 6.00 | 1.51 |
| 21 | 40.58 | 20.28 | 20.17 | 5.49 | 4.94 | 14.28 | 12.99 | 19.76 | 17.94 | 8.66 | 10.68 | 1.91 |

| | FM arms2 | FM legs | FM legs2 | FM_per1 | FM_per2 | V02_I1 | V02_I2 | V02_kg1 | V02_kg2 | max hr | max hr2 | max RQ |
|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------|--------------|----------------|
| Type: | Real | Integer | Integer | Real |
| Source: | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Format... | • | • | Free Format... |
| Dec. Places: | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | • | • | 2 |
| Mean: | 1.56 | 6.92 | 7.00 | 8.61 | 8.57 | 2.236 | 2.346 | 40.07 | 38.44 | 190.800 | 185.789 | 1.14 |
| Std. Deviation: | .73 | 2.39 | 2.53 | 3.17 | 3.20 | .474 | .390 | 6.03 | 5.83 | 10.092 | 11.583 | .04 |
| Std. Error: | .16 | .53 | .57 | .71 | .72 | .106 | .090 | 1.35 | 1.34 | 2.257 | 2.657 | .01 |
| Variance: | .54 | 5.69 | 6.42 | 10.03 | 10.24 | .225 | .152 | 36.36 | 33.96 | 101.853 | 134.175 | 1.84E-3 |
| Coeff. of Variation: | .47 | .34 | .36 | .37 | .37 | .212 | .166 | .15 | .15 | .053 | .062 | .04 |
| Minimum: | .71 | 4.32 | 4.09 | 5.20 | 4.93 | 1.800 | 1.606 | 27.80 | 25.10 | 170 | 167 | 1.07 |
| Maximum: | 2.98 | 13.80 | 12.96 | 17.83 | 15.88 | 3.158 | 2.949 | 50.20 | 50.30 | 211 | 212 | 1.25 |
| Range: | 2.27 | 9.48 | 8.87 | 12.63 | 10.94 | 1.358 | 1.343 | 22.40 | 25.20 | 41.000 | 45.000 | .18 |
| Count: | 20 | 20 | 20 | 20 | 20 | 19 | 20 | 19 | 20 | 19 | 20 | 20 |
| Missing Cells: | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 |
| Sum: | 31.23 | 138.50 | 140.07 | 172.13 | 171.30 | 44.714 | 44.577 | 801.36 | 730.45 | 3816.000 | 3530.000 | 22.89 |
| Sum of Squares: | 59.01 | 1067.25 | 1103.05 | 1671.97 | 1661.83 | 104.245 | 107.331 | 32799.92 | 28633.47 | 730028.0... | 658252.000 | 26.23 |

| | FM arms2 | FM legs | FM legs2 | FM_per1 | FM_per2 | V02_I1 | V02_I2 | V02_kg1 | V02_kg2 | max hr | max hr2 | max RQ |
|----|----------|---------|----------|---------|---------|--------|--------|---------|---------|--------|---------|--------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | .95 | 5.98 | 6.11 | 6.94 | 7.06 | 2.037 | 2.101 | 38.80 | 39.71 | 180 | 179 | 1.13 |
| 3 | .71 | 5.24 | 5.23 | 6.01 | 5.93 | 1.800 | 2.151 | 36.55 | 38.90 | 211 | 212 | 1.13 |
| 4 | 1.11 | 4.66 | 4.14 | 6.09 | 5.25 | 1.800 | 2.020 | 42.80 | 40.80 | 200 | 206 | 1.13 |
| 5 | 1.06 | 7.70 | 8.08 | 9.17 | 9.14 | 1.800 | 1.988 | 35.93 | 35.00 | 208 | 188 | 1.09 |
| 6 | 1.04 | 4.48 | 4.34 | 5.71 | 5.38 | 2.537 | • | 46.90 | • | 190 | • | 1.17 |
| 7 | 1.00 | 4.32 | 4.09 | 5.70 | 5.09 | 1.800 | 1.883 | 36.11 | 38.20 | 191 | 177 | 1.12 |
| 8 | 1.04 | 5.75 | 5.97 | 6.78 | 7.01 | 1.800 | 2.522 | 47.60 | 42.60 | 196 | 193 | 1.16 |
| 9 | .74 | 5.12 | 4.19 | 6.02 | 4.93 | 2.500 | 2.686 | 44.10 | 50.30 | 190 | 191 | 1.18 |
| 10 | 1.55 | 6.92 | 7.41 | 8.40 | 8.97 | 2.868 | 2.653 | 45.10 | 40.20 | 170 | 168 | 1.15 |
| 11 | 1.24 | 4.71 | 4.76 | 5.67 | 6.00 | 3.002 | 2.245 | 50.20 | 41.34 | 190 | 192 | 1.13 |
| 12 | 1.63 | 8.18 | 6.81 | 10.34 | 8.44 | 2.189 | 2.023 | 36.25 | 32.90 | 195 | 188 | 1.15 |
| 13 | 2.91 | 13.80 | 12.96 | 17.83 | 15.88 | 2.863 | 2.701 | 36.70 | 36.30 | 188 | 185 | 1.19 |
| 14 | 2.28 | 8.87 | 10.30 | 11.15 | 12.58 | 1.800 | 2.949 | 41.94 | 40.40 | 181 | 189 | 1.08 |
| 15 | 2.98 | 9.12 | 10.13 | 11.88 | 13.10 | 2.138 | 2.316 | 30.80 | 30.00 | 200 | 170 | 1.19 |
| 16 | 2.31 | 9.26 | 9.89 | 12.04 | 12.20 | 1.800 | 1.606 | 27.80 | 25.10 | 187 | 167 | 1.12 |
| 17 | 2.64 | 9.47 | 9.71 | 11.71 | 12.35 | 2.768 | 2.925 | 39.60 | 41.20 | 173 | 178 | 1.19 |
| 18 | 1.00 | 4.32 | 5.03 | 5.20 | 6.03 | 1.800 | 2.385 | 43.05 | 38.90 | 189 | 192 | 1.25 |
| 19 | 1.44 | 7.13 | 7.85 | 8.58 | 9.30 | 3.158 | 2.937 | 49.04 | 44.50 | 196 | 187 | 1.14 |
| 20 | 1.27 | 6.43 | 5.53 | 7.94 | 6.80 | 2.066 | 2.463 | 36.90 | 43.60 | 190 | 180 | 1.07 |
| 21 | 2.33 | 7.05 | 7.55 | 8.96 | 9.87 | 2.186 | 2.022 | 35.20 | 30.50 | 191 | 188 | 1.12 |

| | max RQ2 | LTA | LTA2 | VO2_1 | VO2_2 | VCO2_1 | VCO2_2 | RMR_1 | RMR_2 | RQ | RQ2 | M_abs1 | M_corr1 | M_abs2 |
|----------------------|----------------|------------|-------------|-------------|--------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
| Type: | Real | Real | Real | Integer | Integer | Integer | Integer | Integer | Real | Real | Real | Real | Real | Real |
| Source: | User Entered | User ... | User Ent... | User Ent... | User Entered | User Ent... | User Entered | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Enter... |
| Class: | Continuous | Contini... | Continu... | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Format... | Free ... | Free Fo... | * | * | * | * | * | * | * | * | * | * | Free Form... |
| Dec. Places: | 2 | 0 | 0 | * | * | * | * | * | * | 2 | 2 | 3 | 3 | 2 |
| Mean: | 1.12 | 472 | 397 | 201.300 | 202.750 | 168.850 | 171.100 | 1378.300 | 1392.500 | .84 | .85 | 460.917 | 469.965 | 488.24 |
| Std. Deviation: | .06 | 196 | 379 | 21.014 | 24.242 | 15.142 | 14.356 | 139.680 | 157.843 | .04 | .04 | 136.089 | 139.529 | 176.60 |
| Std. Error: | .01 | 49 | 98 | 4.699 | 5.421 | 3.386 | 3.210 | 31.233 | 35.296 | .01 | .01 | 30.430 | 31.200 | 40.52 |
| Variance: | 3.13E-3 | 38378 | 143511 | 441.589 | 587.671 | 229.292 | 206.095 | 19510.432 | 24914.474 | 1.85... | 1.80E-3 | 18520.200 | 19468.226 | 31187.96 |
| Coeff. of Variation: | .05 | 4E-1 | 1 | .104 | .120 | .090 | .084 | .101 | .113 | .05 | .05 | .295 | .297 | .36 |
| Minimum: | 1.02 | 50 | 54 | 150 | 147 | 132 | 134 | 1030 | 1020 | .77 | .78 | 256.110 | 260.568 | 231.42 |
| Maximum: | 1.22 | 736 | 1335 | 233 | 249 | 192 | 195 | 1596 | 1680 | .91 | .93 | 727.290 | 747.533 | 894.84 |
| Range: | .20 | 686 | 1281 | 83.000 | 102.000 | 60.000 | 61.000 | 566.000 | 660.000 | .14 | .15 | 471.180 | 486.965 | 663.42 |
| Count: | 19 | 16 | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 19 |
| Missing Cells: | 2 | 5 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Sum: | 21.25 | 7559 | 5961 | 4026.000 | 4055.000 | 3377.000 | 3422.000 | 27566.000 | 27850.000 | 16.81 | 16.99 | 9218.340 | 9399.299 | 9276.52 |
| Sum of Squares: | 23.82 | 41464... | 4377972 | 818824.0... | 833317.0... | 574563.000 | 589420.000 | 38364916 | 39254500 | 14.16 | 14.47 | 4600773.422 | 4787237.030 | 5090529.99 |

| | max_RQ2 | LTA | LTA2 | VO2_1 | VO2_2 | VCO2_1 | VCO2_2 | RMR_1 | RMR_2 | RQ | RQ2 | M_abs1 | M_corr1 | M_abs2 |
|----|---------|-----|------|-------|-------|--------|--------|-------|-------|-----|---------|---------|---------|--------|
| 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 2 | 1.08 | . | . | 183 | 147 | 166 | 134 | 1270 | 1020 | .91 | .92 | 365.400 | 371.935 | 442.95 |
| 3 | 1.10 | 269 | 304 | 194 | 188 | 160 | 158 | 1320 | 1290 | .82 | .84 | 344.310 | 350.444 | 385.53 |
| 4 | 1.10 | 388 | . | 176 | 171 | 147 | 159 | 1200 | 1190 | .83 | .93 | 503.300 | 512.455 | 504.00 |
| 5 | 1.22 | . | 190 | 184 | 222 | 150 | 177 | 1250 | 1510 | .82 | .79 | 592.400 | 603.248 | 583.54 |
| 6 | . | . | 217 | 211 | 166 | 176 | 1460 | 1440 | .77 | .84 | 353.300 | 359.605 | . | |
| 7 | 1.22 | . | 150 | 174 | 132 | 160 | 1030 | 1210 | .88 | .92 | 336.140 | 342.119 | 316.27 | |
| 8 | 1.13 | 370 | 115 | 187 | 193 | 165 | 163 | 1290 | 1320 | .88 | .84 | 458.900 | 467.211 | 452.54 |
| 9 | 1.16 | 704 | 234 | 202 | 210 | 166 | 176 | 1380 | 1440 | .82 | .84 | 530.900 | 540.579 | 456.84 |
| 10 | 1.09 | 486 | 383 | 217 | 227 | 188 | 182 | 1500 | 1540 | .86 | .80 | 445.570 | 453.628 | 574.26 |
| 11 | 1.06 | 736 | 703 | 216 | 226 | 181 | 184 | 1480 | 1540 | .84 | .82 | 519.710 | 529.176 | 536.58 |
| 12 | 1.12 | 50 | 54 | 198 | 180 | 177 | 159 | 1370 | 1250 | .89 | .88 | 263.140 | 269.293 | 231.42 |
| 13 | 1.12 | 678 | 94 | 195 | 210 | 176 | 184 | 1360 | 1450 | .91 | .88 | 572.860 | 583.336 | 516.00 |
| 14 | 1.11 | 480 | 125 | 227 | 234 | 183 | 191 | 1540 | 1600 | .80 | .82 | 367.430 | 374.003 | 894.84 |
| 15 | 1.15 | 561 | 1335 | 233 | 249 | 192 | 195 | 1596 | 1680 | .82 | .78 | 727.290 | 740.701 | 577.69 |
| 16 | 1.02 | 342 | 83 | 189 | 206 | 167 | 169 | 1310 | 1400 | .89 | .83 | 256.110 | 260.568 | 239.98 |
| 17 | 1.11 | 530 | 996 | 225 | 205 | 178 | 170 | 1530 | 1470 | .79 | .83 | 522.840 | 532.366 | 742.28 |
| 18 | 1.22 | 658 | . | 206 | 193 | 176 | 167 | 1420 | 1330 | .85 | .87 | 727.000 | 747.533 | 719.99 |
| 19 | 1.11 | 171 | 176 | 231 | 220 | 188 | 188 | 1570 | 1510 | .81 | .86 | 573.040 | 588.800 | 509.14 |
| 20 | 1.08 | 550 | 490 | 189 | 160 | 166 | 1300 | 1300 | .85 | .88 | 363.000 | 369.489 | 340.27 | |
| 21 | 1.05 | 586 | 679 | 207 | 200 | 159 | 164 | 1390 | 1360 | .77 | .82 | 395.700 | 402.810 | 252.40 |

| | M_corr2 | M_FFM1 | M_FFM2 | Fasting Ins 1 | Fasting Ins 2 | Ins_1 | Ins_2 | Glu - 10' 1 | Glu 0' 1 | Glu 30' 1 | Glu 60' 1 | Glu 90' 1 |
|----------------------|--------------|--------------|--------------|---------------|---------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|
| Type: | Real | Real | Real | String | String | Real | Real | Integer | Real | Real | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Nominal | Nominal | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Form... | Free Form... | Free Form... | * | * | Free Fo... | * | * | * | Free Forma... | Free Forma... | Free Forma... |
| Dec. Places: | 3 | 2 | 2 | * | * | 2 | 2 | * | * | 2 | 2 | 2 |
| Mean: | 490.186 | 11.36 | 11.82 | * | 76.31 | 77.57 | 74.450 | 74.000 | 73.08 | 75.33 | 75.75 | |
| Std. Deviation: | 167.515 | 2.85 | 3.53 | * | 14.92 | 18.32 | 3.649 | 3.627 | 4.85 | 3.52 | 3.21 | |
| Std. Error: | 38.430 | .64 | .81 | * | 3.34 | 4.20 | .816 | .811 | 1.08 | .79 | .72 | |
| Variance: | 28061.141 | 8.14 | 12.48 | * | 222.48 | 335.55 | 13.313 | 13.158 | 23.51 | 12.39 | 10.30 | |
| Coeff. of Variation: | .342 | .25 | .30 | * | .20 | .24 | .049 | .049 | .07 | .05 | .04 | |
| Minimum: | 213.901 | 7.03 | 5.39 | * | 54.00 | 51.33 | 66 | 67 | 66.33 | 68.33 | 71.16 | |
| Maximum: | 830.881 | 16.39 | 18.79 | * | 102.00 | 123.00 | 81 | 79 | 81.33 | 82.66 | 84.50 | |
| Range: | 616.981 | 9.36 | 13.40 | * | 48.00 | 71.67 | 15.000 | 12.000 | 15.00 | 14.33 | 13.34 | |
| Count: | 19 | 20 | 19 | 20 | 19 | 20 | 19 | 20 | 20 | 20 | 20 | |
| Missing Cells: | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | |
| Sum: | 9313.535 | 227.20 | 224.52 | * | 1526.29 | 1473.79 | 1489.000 | 1480.000 | 1461.60 | 1506.60 | 1515.10 | |
| Sum of Squares: | 5070465.055 | 2735.68 | 2877.79 | * | 120705.... | 120359.... | 111109.000 | 109770.000 | 107260.37 | 113727.50 | 114972.09 | |

| | M_corr2 | M_FFM1 | M_FFM2 | Fasting | Ins 1 | Fasting | Ins 2 | Ins 1 | Ins 2 | Glu - 10' 1 | Glu 0' 1 | Glu 30' 1 | Glu 60' 1 | Glu 90' 1 |
|----|---------|--------|--------|---------|-------|---------|--------|-------|-------|-------------|----------|-----------|-----------|-----------|
| 1 | • | • | • | | | | | • | • | | • | | • | • |
| 2 | 456.344 | 9.91 | 12.32 | <5 | | 85.27 | 71.50 | 75 | 75 | 81.00 | 72.33 | | 78.66 | |
| 3 | 397.169 | 8.67 | 9.79 | 6 | 7 | 69.90 | 123.00 | 66 | 70 | 71.16 | 79.66 | 71.16 | | |
| 4 | 519.265 | 14.86 | 15.06 | <5 | 6 | 88.00 | 91.00 | 77 | 78 | 69.50 | 78.83 | 78.66 | | |
| 5 | 601.239 | 16.39 | 15.79 | <5 | | 86.90 | 63.43 | 73 | 77 | 67.66 | 74.16 | 73.83 | | |
| 6 | • | 9.13 | • | 37 | | 57.00 | • | 69 | 68 | 68.33 | 68.33 | 74.00 | | |
| 7 | 325.789 | 9.46 | 9.09 | <6.6 | | 54.00 | 57.70 | 79 | 78 | 79.33 | 75.16 | 74.33 | | |
| 8 | 466.230 | 11.71 | 11.63 | <5 | | 85.40 | 100.47 | 75 | 76 | 71.50 | 77.83 | 74.50 | | |
| 9 | 470.661 | 13.10 | 11.19 | <6.6 | | 80.40 | 58.40 | 81 | 79 | 68.66 | 73.83 | 74.33 | | |
| 10 | 591.675 | 10.34 | 12.79 | <5 | | 59.10 | 56.60 | 75 | 76 | 75.00 | 76.16 | 75.00 | | |
| 11 | 552.842 | 12.17 | 12.49 | <5 | | 56.23 | 51.33 | 73 | 73 | 74.83 | 69.50 | 73.83 | | |
| 12 | 213.901 | 7.03 | 5.39 | 11 | 11 | 86.07 | 82.30 | 77 | 73 | 78.83 | 82.66 | 84.50 | | |
| 13 | 531.632 | 13.86 | 12.84 | 5 | <5 | 85.33 | 79.30 | 76 | 77 | 67.33 | 78.50 | 82.16 | | |
| 14 | 830.881 | 8.53 | 18.79 | <6.6 | | 60.70 | 65.10 | 72 | 67 | 78.16 | 75.00 | 75.66 | | |
| 15 | 595.210 | 15.80 | 13.44 | <5 | | 94.57 | 70.27 | 74 | 75 | 67.50 | 72.16 | 73.66 | | |
| 16 | 247.163 | 7.25 | 6.66 | 9 | 14 | 78.63 | 77.73 | 79 | 75 | 75.50 | 79.50 | 76.00 | | |
| 17 | 689.000 | 11.83 | 15.16 | 8 | | 70.63 | 92.20 | 76 | 74 | 73.16 | 75.66 | 73.66 | | |
| 18 | 741.866 | 15.54 | 15.86 | <5 | | 61.00 | 71.30 | 75 | 77 | 66.33 | 73.83 | 74.50 | | |
| 19 | 472.180 | 12.35 | 10.37 | 8 | 3 | 68.03 | 72.13 | 69 | 68 | 74.83 | 73.50 | 73.33 | | |
| 20 | 350.523 | 9.83 | 9.42 | 8 | | 97.13 | 98.03 | 76 | 74 | 71.66 | 73.50 | 78.33 | | |
| 21 | 259.964 | 9.45 | 6.41 | 5 | 9 | 102.00 | 92.00 | 72 | 70 | 81.33 | 76.50 | 75.00 | | |

| | Glu 120' 1 | Ave Glu 1 | Glu -10' 2 | Glu 0' 2 | Glu 30' 2 | Glu 60' 2 | Glu 90' 2 | Glu 120' 2 | Ave Glu 2 | Chol_1 | Trig_1 | HDL_1 |
|----------------------|----------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|
| Type: | Real | Real | Integer | Real | Real | Real | Real | Real | Real | Integer | Integer | Integer |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Format... | * | * | Free Forma... | Free Forma... | Free Forma... | Free Forma... | Free Forma... | Free Forma... | * | * | * |
| Dec. Places: | 2 | . | . | 2 | 2 | 2 | 2 | 2 | 2 | . | . | . |
| Mean: | 75.44 | 74.92 | 75.316 | 75.579 | 77.76 | 76.87 | 78.22 | 76.25 | 77.32 | 174.950 | 95.900 | 47.000 |
| Std. Deviation: | 4.41 | 2.87 | 3.801 | 3.863 | 19.45 | 4.98 | 4.31 | 4.55 | 6.08 | 32.872 | 25.377 | 13.381 |
| Std. Error: | .99 | .64 | .872 | .886 | 4.46 | 1.14 | .99 | 1.04 | 1.39 | 7.350 | 5.674 | 2.992 |
| Variance: | 19.47 | 8.24 | 14.450 | 14.924 | 378.43 | 24.78 | 18.55 | 20.67 | 36.92 | 1080.576 | 643.989 | 179.053 |
| Coeff. of Variation: | .06 | .04 | .050 | .051 | .25 | .06 | .06 | .06 | .08 | .188 | .265 | .285 |
| Minimum: | 68.00 | 69.95 | 68 | 70 | 65.83 | 70.50 | 70.66 | 70.16 | 71.66 | 133 | 49 | 32 |
| Maximum: | 86.50 | 83.12 | 81 | 80 | 155.50 | 89.83 | 91.50 | 90.16 | 97.12 | 292 | 143 | 77 |
| Range: | 18.50 | 13.17 | 13.000 | 10.000 | 89.67 | 19.33 | 20.84 | 20.00 | 25.46 | 159.000 | 94.000 | 45.000 |
| Count: | 20 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 20 | 20 | 20 | 20 |
| Missing Cells: | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| Sum: | 1508.77 | 1498.37 | 1431.000 | 1436.000 | 1477.44 | 1460.45 | 1486.10 | 1448.84 | 1469.13 | 3499.000 | 1918.000 | 940.000 |
| Sum of Squares: | 114189.19 | 112412.23 | 108037.000 | 10800.000 | 121697.39 | 112704.74 | 116570.40 | 110853.05 | 114261.58 | 632681.000 | 196172.0 | 47582.000 |

| | Glu 120' 1 | Ave Glu 1 | Glu -10' 2 | Glu 0' 2 | Glu 30' 2 | Glu 60' 2 | Glu 90' 2 | Glu 120' 2 | Ave Glu 2 | Chol_1 | Trig_1 | HDL_1 |
|----|------------|-----------|------------|----------|-----------|-----------|-----------|------------|-----------|--------|--------|-------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 75.66 | 76.91 | 74 | 80 | 71.00 | 87.66 | 78.33 | 78.16 | 78.78 | 199 | 49 | 73 |
| 3 | 68.00 | 72.91 | 73 | 71 | 75.83 | 76.50 | 80.16 | 75.16 | 76.91 | 157 | 107 | 43 |
| 4 | 82.00 | 77.24 | 68 | 70 | 67.00 | 76.00 | 70.66 | 73.00 | 71.66 | 149 | 77 | 34 |
| 5 | 74.83 | 72.62 | 79 | 80 | 79.83 | 77.33 | 79.16 | 81.33 | 79.41 | 167 | 117 | 47 |
| 6 | 69.16 | 69.95 | • | • | • | • | • | • | • | 160 | 100 | 32 |
| 7 | 75.33 | 76.03 | 81 | 80 | 80.83 | 81.66 | 84.00 | 70.50 | 79.24 | 167 | 126 | 34 |
| 8 | 74.16 | 74.49 | 76 | 77 | 155.50 | 78.16 | 75.83 | 75.00 | 97.12 | 149 | 112 | 32 |
| 9 | 72.50 | 72.33 | 76 | 76 | 72.66 | 78.83 | 77.16 | 74.83 | 75.87 | 133 | 62 | 50 |
| 10 | 75.33 | 75.37 | 76 | 77 | 72.16 | 73.83 | 76.66 | 77.00 | 74.91 | 167 | 61 | 66 |
| 11 | 72.83 | 72.74 | 76 | 74 | 71.00 | 73.33 | 74.50 | 74.66 | 73.37 | 183 | 114 | 45 |
| 12 | 86.50 | 83.12 | 71 | 70 | 70.33 | 75.50 | 80.50 | 77.83 | 76.04 | 181 | 73 | 54 |
| 13 | 83.00 | 77.74 | 80 | 79 | 71.83 | 78.50 | 78.83 | 78.83 | 76.99 | 165 | 119 | 39 |
| 14 | 75.16 | 75.99 | 77 | 78 | 65.83 | 72.50 | 79.16 | 73.40 | 72.72 | 156 | 113 | 48 |
| 15 | 75.16 | 72.12 | 79 | 75 | 67.50 | 75.83 | 77.83 | 78.50 | 74.91 | 172 | 83 | 40 |
| 16 | 76.16 | 76.79 | 80 | 79 | 81.16 | 89.83 | 91.50 | 90.16 | 88.16 | 292 | 75 | 77 |
| 17 | 73.16 | 73.91 | 78 | 77 | 73.16 | 73.00 | 73.50 | 70.33 | 72.49 | 146 | 84 | 57 |
| 18 | 78.50 | 73.29 | 75 | 80 | 80.66 | 72.66 | 77.16 | 77.50 | 76.99 | 200 | 122 | 36 |
| 19 | 72.00 | 73.41 | 71 | 70 | 72.83 | 70.50 | 77.33 | 70.16 | 72.70 | 191 | 143 | 57 |
| 20 | 72.83 | 74.08 | 71 | 73 | 79.50 | 74.83 | 78.50 | 77.16 | 77.49 | 184 | 81 | 39 |
| 21 | 76.50 | 77.33 | 70 | 70 | 68.83 | 74.00 | 75.33 | 75.33 | 73.37 | 181 | 100 | 37 |

| | LDL_1 | Ch_HDL1 | ins_0 | ins_120 | glu_0 | glu_120 | L2sc_1 | L2sc_2 | L2vis_1 | L2vis_2 | L4sc_1 | L4sc_2 | L4vis_1 |
|----------------------|-------------|----------------|------------|--------------|------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Type: | Integer | Real | Real | Real | Real | Real | Integer | Real | Integer | Real | Integer | Long Inte... | Integer |
| Source: | User Ent... | User Entered | User En... | User Entered | User En... | User Entered | User Enter... | User Enter... | User Enter... | User Enter... | User Enter... | User Enter... | User Enter... |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | . | Free Format... | Free Fo... | Free Form... | Free Fo... | Free Form... | * | Free Form... | * | Free Form... | * | * | . |
| Dec. Places: | . | 2 | 3 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | . |
| Mean: | 103.800 | 3.91 | 7.335 | 38.537 | 81 | 79 | 9245.500 | 10222.60 | 3771.600 | 3495.76 | 14704.294 | 20586.000 | 3617.235 |
| Std. Deviation: | 34.481 | .91 | 2.942 | 35.554 | 6 | 17 | 4988.054 | 5775.94 | 1752.354 | 1814.02 | 6604.733 | 9460.874 | 1265.633 |
| Std. Error: | 7.710 | .20 | .658 | 8.157 | 1 | 4 | 1577.361 | 1291.54 | 554.143 | 405.63 | 1601.883 | 2170.473 | 306.961 |
| Variance: | 1188.905 | .83 | 8.656 | 1264.121 | 39 | 289 | 2.488E7 | 33361439... | 3070744.2... | 3290683.81 | 4.362E7 | 8.951E7 | 1601826.9... |
| Coeff. of Variation: | .332 | .23 | .401 | .923 | 8E-2 | 2E-1 | .540 | .57 | .465 | .52 | .449 | .460 | .350 |
| Minimum: | 16 | 2.53 | 5.000 | 11.000 | 69 | 51 | 3352 | 97.96 | 1779 | 71.15 | 5306 | 8812 | 1438 |
| Maximum: | 200 | 5.60 | 14.800 | 153.600 | 92 | 111 | 17852 | 20561.00 | 7762 | 6848.00 | 29532 | 40379 | 6404 |
| Range: | 184.000 | 3.07 | 9.800 | 142.600 | 23 | 60 | 14500.000 | 20463.04 | 5983.000 | 6776.85 | 24226.000 | 31567.000 | 4966.000 |
| Count: | 20 | 20 | 20 | 19 | 19 | 10 | 20 | 10 | 20 | 17 | 19 | 17 | . |
| Missing Cells: | 1 | 1 | 1 | 2 | 2 | 11 | 1 | 11 | 1 | 4 | 2 | 2 | 4 |
| Sum: | 2076.000 | 78.26 | 146.700 | 732.200 | 1539 | 1498 | 92455.000 | 204051.96 | 37716.000 | 69915.15 | 249973.000 | 391134.000 | 61493.000 |
| Sum of Squares: | 238078.0... | 321.98 | 1240.510 | 50970.860 | 125378 | 123237 | 1078718879 | 2.72E9 | 169886364 | 30692940... | 4373636463 | 9663031036 | 248063881 |

| | LDL_1 | Ch_HDL1 | ins_0 | ins_120 | glu_0 | glu_120 | L2sc_1 | L2sc_2 | L2vis_1 | L2vis_2 | L4sc_1 | L4sc_2 | L4vis_1 |
|----|-------|---------|--------|---------|-------|---------|---------|-----------|---------|---------|--------|--------|---------|
| 1 | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 2 | 16 | 2.73 | 5.000 | 13.000 | 82 | 78 | 6493.00 | • | 1735.00 | 7809 | 12631 | 1438 | |
| 3 | 93 | 3.65 | 11.000 | 94.000 | 79 | 81 | 4207 | 5440.00 | 3795 | 3140.00 | 5440 | 12841 | 3140 |
| 4 | 100 | 4.40 | 5.000 | 11.000 | 70 | 51 | • | 11919.00 | * | 3155.00 | 14767 | 18821 | 3793 |
| 5 | 97 | 3.55 | 6.300 | 16.000 | 82 | 87 | • | 5457.00 | * | 1436.00 | 5306 | * | 3203 |
| 6 | 108 | 5.00 | 7.000 | 18.000 | 83 | 64 | * | 6520.00 | * | 2220.00 | 13150 | 11976 | 3929 |
| 7 | 108 | 4.91 | 5.300 | 21.300 | 89 | 77 | * | 7792.00 | * | 3272.00 | 16136 | 13993 | 4288 |
| 8 | 95 | 4.70 | 7.000 | 39.000 | 87 | 71 | * | 11815.00 | * | 3219.00 | * | 21447 | * |
| 9 | 71 | 2.66 | 5.000 | 31.900 | 83 | 104 | 4807 | 3847.00 | 1779 | 1616.00 | 13065 | 8812 | 2400 |
| 10 | 89 | 2.53 | 5.000 | 13.000 | 82 | 64 | 7872 | 9642.00 | 4260 | 5854.00 | 12513 | 13401 | 5060 |
| 11 | 115 | 4.10 | 6.000 | 14.000 | 79 | 66 | * | 10623.00 | * | 3391.00 | 13871 | 21091 | 2851 |
| 12 | 112 | 3.35 | 14.800 | 153.600 | 69 | 111 | 11920 | 97.96 | 7762 | 71.15 | 21480 | 21355 | 6404 |
| 13 | 102 | 4.20 | 12.000 | 45.000 | 82 | 76 | * | 17521.00 | * | 4344.00 | * | 40379 | * |
| 14 | 85 | 3.25 | 5.000 | 21.800 | 82 | 103 | 15136 | 18210.00 | 2694 | 4099.00 | * | 26343 | * |
| 15 | 115 | 4.30 | 12.000 | 22.000 | 87 | 75 | * | 18482.00 | * | 6848.00 | 17056 | 36109 | 4862 |
| 16 | 200 | 3.79 | 6.400 | 58.000 | 92 | 111 | 17852 | 117978.00 | 4542 | 6105.00 | 29532 | 29838 | 4707 |
| 17 | 72 | 2.56 | 8.700 | 35.600 | 74 | 65 | 12532 | 11622.00 | 2518 | 2013.00 | 24624 | 24992 | 3707 |
| 18 | 140 | 5.60 | 5.000 | 17.000 | 86 | 69 | 5315 | 6710.00 | 3237 | 4549.00 | 9813 | 11847 | 2128 |
| 19 | 105 | 3.35 | 5.200 | * | 72 | 69 | 3352 | 4042.00 | 2185 | 2176.00 | 8336 | 12350 | 3013 |
| 20 | 129 | 4.72 | 6.000 | 37.000 | * | * | 9462 | 9280.00 | 4944 | 4500.00 | 18400 | 16672 | 4389 |
| 21 | 124 | 4.90 | 9.000 | 71.000 | 79 | 76 | * | 20561.00 | * | 6172.00 | 18675 | 36236 | 2181 |

| | L4vis_2 | RTatt_1 | RTatt_2 | LTatt_1 | LTatt_2 | Avatt_1 | Avatt_2 | RTarea_1 | RTarea_2 | LTarea_1 | LTarea_2 | RTsc_1 | RTsc_2 |
|----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|
| Type: | Integer | Real | Real | Real | Real | Real | Real | Integer | Integer | Integer | Integer | Integer | Integer |
| Source: | User Enter... | User Entered | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | * | Free Form... | Free Form... | Free Form... | Free Form... | Free For... | Free For... | * | * | * | * | * | * |
| Dec. Places: | 2 | 2 | 2 | 2 | 2 | 2 | 2 | . | . | . | . | . | . |
| Mean: | 4030.526 | 48.22 | 50.16 | 48.41 | 49.83 | 48.99 | 49.99 | 11977.833 | 11491.556 | 11749.889 | 11274.056 | 9889.944 | 10248.500 |
| Std. Deviation: | 1529.070 | 2.40 | 1.73 | 2.57 | 2.35 | 2.01 | 1.96 | 1575.179 | 1672.613 | 1625.093 | 1686.158 | 2996.194 | 3103.146 |
| Std. Error: | 350.793 | .57 | .41 | .61 | .55 | .46 | .46 | 371.273 | 394.239 | 383.038 | 397.431 | 706.210 | 731.418 |
| Variance: | 2338055.4... | 5.77 | 2.98 | 6.61 | 5.50 | 4.05 | 3.83 | 2481189.559 | 2797632.967 | 2640926.810 | 2843128.056 | 8977177.3... | 9629513.0... |
| Coeff. of Variation: | .379 | .05 | .03 | .05 | .05 | .04 | .04 | .132 | .146 | .138 | .150 | .303 | .303 |
| Minimum: | 1907 | 43.90 | 45.60 | 44.70 | 45.70 | 45.70 | 45.65 | 9200 | 7961 | 8452 | 7592 | 5147 | 6013 |
| Maximum: | 7300 | 51.80 | 53.20 | 53.00 | 55.90 | 52.07 | 54.05 | 16354 | 14929 | 15919 | 14589 | 14350 | 15841 |
| Range: | 5393.000 | 7.90 | 7.60 | 8.30 | 10.20 | 6.37 | 8.40 | 7154.000 | 6968.000 | 7467.000 | 6997.000 | 9203.000 | 9828.000 |
| Count: | 19 | 18 | 18 | 18 | 19 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Missing Cells: | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Sum: | 76580.000 | 867.90 | 902.80 | 871.40 | 897.00 | 930.80 | 899.90 | 215601.000 | 206848.000 | 211498.000 | 202933.000 | 178019.000 | 184473.000 |
| Sum of Squares: | 350742704 | 41945.37 | 45331.14 | 42297.80 | 44794.00 | 45672.25 | 45055.05 | 2624613067... | 242465044... | 2529973756 | 2336211093 | 1913210035 | 2054273263 |

| | L4vis_2 | RTatt_1 | RTatt_2 | LTatt_1 | LTatt_2 | Avatt_1 | Avatt_2 | RTarea_1 | RTarea_2 | LTarea_1 | LTarea_2 | RTsc_1 | RTsc_2 |
|----|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|--------|--------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 3149 | 45.00 | 49.20 | 45.40 | 49.70 | 46.53 | 49.45 | 11472 | 9969 | 10636 | 9305 | 12223 | 9286 |
| 3 | 3069 | 50.80 | • | 50.10 | • | 50.45 | • | 11782 | • | 11772 | • | 7145 | • |
| 4 | 4074 | 49.80 | 51.30 | 49.40 | 50.80 | 50.35 | 10952 | 11379 | 10717 | 11022 | 6627 | 7949 | 9235 |
| 5 | • | 46.70 | 49.60 | 45.90 | 49.20 | 47.40 | 49.40 | 9200 | 7961 | 8452 | 7592 | 12745 | • |
| 6 | 3488 | 49.80 | 50.60 | 49.10 | 49.70 | 49.83 | 50.15 | 12009 | 11659 | 10757 | 10412 | 7877 | 6013 |
| 7 | 4342 | 51.80 | 51.20 | 51.10 | 50.80 | 51.37 | 51.00 | 10564 | 10737 | 10143 | 10040 | 5147 | 7247 |
| 8 | 3439 | • | 50.80 | • | 50.00 | • | 50.40 | • | 11993 | • | 11537 | • | 9697 |
| 9 | 2116 | 51.10 | • | 51.00 | • | 51.05 | • | 12774 | • | 12525 | • | 8470 | • |
| 10 | 5558 | 46.20 | 49.60 | 45.00 | 49.60 | 46.93 | 49.60 | 12195 | 12834 | 12516 | 13422 | 8537 | 11631 |
| 11 | 1907 | 47.30 | 48.90 | 46.40 | 49.40 | 47.53 | 49.15 | 13284 | 13190 | 12534 | 12689 | 7586 | 6985 |
| 12 | 6869 | 50.00 | 50.50 | 50.30 | 49.60 | 50.27 | 50.05 | 11571 | 10455 | 11786 | 10690 | 8650 | 14504 |
| 13 | 3628 | • | 49.80 | • | 49.80 | 49.80 | 49.80 | • | 10247 | • | 10487 | • | 15841 |
| 14 | 4442 | 44.80 | 45.60 | 47.00 | 45.70 | 45.80 | 45.65 | 11543 | 11564 | 12649 | 12375 | 14350 | 11272 |
| 15 | 7300 | 43.90 | 48.40 | 44.80 | 45.70 | 45.70 | 47.05 | 13356 | 13102 | 12511 | 12239 | 14028 | 11740 |
| 16 | 5420 | 48.30 | 49.30 | 48.70 | 49.00 | 48.77 | 49.15 | 9783 | 9827 | 9628 | 9614 | 12654 | 13603 |
| 17 | 3776 | 49.00 | 51.50 | 48.80 | 51.10 | 49.77 | 51.30 | 12331 | 12964 | 12479 | 12393 | 14314 | 14525 |
| 18 | 2079 | 45.80 | 49.10 | 44.70 | 47.70 | 46.53 | 48.40 | 16354 | 14929 | 15919 | 14589 | 7298 | 6928 |
| 19 | 2328 | 48.20 | 53.20 | 49.20 | 53.10 | 50.20 | 53.15 | 13286 | 13039 | 13322 | 13044 | 13002 | 13008 |
| 20 | 4503 | 48.40 | 52.00 | 49.60 | 51.60 | 50.00 | 51.80 | 11987 | 11166 | 11624 | 10946 | 8522 | 6893 |
| 21 | 5093 | 51.00 | 52.20 | 53.00 | 55.90 | 52.07 | 54.05 | 11158 | 9833 | 11528 | 10537 | 8844 | 8116 |

| | Ltsc_1 | Ltsc_2 | Thi_sc1 | Thi_sc2 | Thi_ar1 | Thi_ar2 | TEE_1 | TEE_2 | EEPA_1 | EEPA_2 | NVAEE_1 | NVAEE_2 | PAL_1 |
|----------------------|--------------|---------------|---------------|---------------|---------------|---------------|-------------|-------------|--------------|--------------|--------------|--------------|-------------|
| Type: | Integer | Real | Real | Real | Real | Real | Integer | Integer | Real | Real | Real | Real | Real |
| Source: | User Ente... | User Enter... | User Ent... | User Ent... | User Entered | User Entered | User Entered | User Entered | User Ent... |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Dec. Places: | . | 2 | 2 | 2 | 2 | 2 | . | . | 2 | 2 | 2 | 2 | 2 |
| Mean: | 9787.556 | 10316.944 | 9838.75 | 10282.72 | 11863.86 | 11382.81 | 25686250 | 2609842 | 933.13 | 945.70 | 426.56 | 589.63 | 1.87 |
| Std. Deviation: | 2883.420 | 3150.035 | 2920.16 | 3119.82 | 1575.61 | 1656.28 | 345.976 | 426.135 | 252.38 | 288.57 | 283.82 | 386.58 | .21 |
| Std. Error: | 672.558 | 742.470 | 688.29 | 735.35 | 371.37 | 390.39 | 77.363 | 97.762 | 56.43 | 66.20 | 70.95 | 99.81 | .05 |
| Variance: | 8142006.2... | 9922721.3... | 8527321.48 | 9733275.21 | 2482538.17 | 2743250.24 | 119699.6... | 181591.2... | 63693.96 | 83271.55 | 80552.47 | 149444.51 | .05 |
| Coeff. of Variation: | .292 | .305 | .30 | .30 | .13 | .15 | .135 | .163 | .27 | .31 | .67 | .66 | .11 |
| Minimum: | 5716 | 6042 | 5431.50 | 6027.50 | 8826.00 | 7776.50 | 1880 | 1838 | 382.00 | 404.20 | -58.00 | -161.10 | 1.44 |
| Maximum: | 14346 | 15879 | 14330.00 | 15860.00 | 16136.50 | 14759.00 | 3030 | 3190 | 1264.30 | 1401.00 | 894.10 | 1303.40 | 2.33 |
| Range: | 8630.000 | 9837.000 | 8898.50 | 9832.50 | 7310.50 | 6982.50 | 1150.000 | 1352.000 | 882.30 | 996.80 | 952.10 | 1464.50 | .90 |
| Count: | 18 | 18 | 18 | 18 | 18 | 18 | 20 | 19 | 20 | 19 | 16 | 15 | 19 |
| Missing Cells: | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 2 | 1 | 2 | 5 | 6 | 2 |
| Sum: | 176176.000 | 185705.000 | 177097.50 | 185089.00 | 213549.50 | 204890.50 | 51355.000 | 49587.000 | 18662.50 | 17968.30 | 6825.00 | 8844.40 | 35.49 |
| Sum of Squares: | 18627746494 | 2084594431 | 1.89E9 | 2068684452 | 2.58E9 | 2.38E9 | 134192455 | 132682833 | 18624630.55 | 18491509.23 | 4119576.04 | 7307117.26 | 67.14 |

| | LTsc_1 | LTsc_2 | Thi_sc1 | Thi_sc2 | Thi_ar1 | Thi_ar2 | TEE_1 | TEE_2 | EEPA_1 | EEPA_2 | NVAE_1 | NVAE_2 | PAL_1 |
|----|--------|--------|----------|----------|----------|----------|-------|-------|---------|---------|--------|---------|-------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 11543 | 9213 | 11883.00 | 9249.50 | 11054.00 | 9637.00 | 2432 | 2112 | 918.80 | 880.80 | • | • | 1.92 |
| 3 | 6891 | • | 7018.00 | • | 11777.00 | • | 2759 | 2620 | 1163.10 | 1068.00 | 894.10 | 764.00 | 2.03 |
| 4 | 6653 | 8040 | 6640.00 | 7994.50 | 10834.50 | 11200.50 | 2477 | • | 1029.30 | • | 641.30 | • | 2.06 |
| 5 | 12840 | 9931 | 12792.50 | 9583.00 | 8826.00 | 7776.50 | 2461 | 2806 | 964.90 | 1015.40 | • | 825.40 | 1.97 |
| 6 | 8174 | 6042 | 8025.50 | 6027.50 | 11383.00 | 11035.50 | 3027 | 2588 | 1264.30 | 889.20 | • | • | 2.07 |
| 7 | 5716 | 7870 | 5431.50 | 7558.50 | 10353.50 | 10388.50 | 2401 | 2006 | 1130.90 | 595.40 | • | • | 2.33 |
| 8 | • | 9144 | • | 9420.50 | • | 11765.00 | 2221 | 2251 | 708.90 | 705.90 | 338.90 | 590.90 | 1.72 |
| 9 | 8021 | • | 8245.50 | • | 12649.50 | • | 2514 | 2439 | 882.60 | 755.10 | 178.60 | 521.20 | 1.82 |
| 10 | 8837 | 11664 | 8687.00 | 11647.50 | 12355.50 | 13128.00 | 2897 | 2988 | 1107.30 | 1149.20 | 621.30 | 766.20 | • |
| 11 | 7624 | 7335 | 7605.00 | 7160.00 | 12909.00 | 12939.50 | 2986 | 3019 | 1207.40 | 1177.10 | 471.40 | 474.10 | 2.02 |
| 12 | 8661 | 14607 | 8655.50 | 14555.50 | 11678.50 | 10572.50 | 2152 | 1838 | 566.80 | 404.20 | 516.80 | 350.20 | 1.72 |
| 13 | • | 15879 | • | 15860.00 | • | 10367.00 | 2200 | 2463 | 620.00 | 766.70 | -58.00 | 672.70 | 1.62 |
| 14 | 14136 | 11787 | 14243.00 | 11529.50 | 12096.00 | 11969.50 | 2728 | 3187 | 915.20 | 1268.30 | 435.20 | 1143.30 | 1.77 |
| 15 | 13841 | 11214 | 13934.50 | 11477.00 | 12933.50 | 12670.50 | 3030 | 3171 | 1131.00 | 1173.90 | 570.00 | -161.10 | 1.80 |
| 16 | 12537 | 13255 | 12595.50 | 13429.00 | 9705.50 | 9720.50 | 1880 | 3096 | 382.00 | 1386.40 | 40.00 | 1303.40 | 1.44 |
| 17 | 14346 | 15340 | 14330.00 | 14932.50 | 12405.00 | 12678.50 | 2961 | 3190 | 1134.90 | 1401.00 | 604.90 | 405.00 | 1.94 |
| 18 | 7122 | 6499 | 7210.00 | 6713.50 | 16136.50 | 14759.00 | 2885 | 2364 | 1176.50 | 797.60 | 518.50 | • | 2.03 |
| 19 | 12033 | 12977 | 12517.50 | 12992.50 | 13304.00 | 13041.50 | 2824 | 2472 | 971.60 | 714.80 | 801.00 | 538.80 | 1.80 |
| 20 | 8616 | 6567 | 8569.00 | 6730.00 | 11805.50 | 11056.00 | 2387 | 2806 | 848.30 | 1225.40 | 298.30 | 735.40 | 1.84 |
| 21 | 8585 | 8341 | 8714.50 | 8228.50 | 11343.00 | 10185.00 | 2143 | 2171 | 538.70 | 593.90 | -47.30 | -85.10 | 1.54 |

| | PAL_2 | Lep_1 | Lep_2 | En_int | Prot_g | CHO_g | Fat_g | Sat_g | Mono_g | Poly_g | Chol_mg | Fiber | Per_Pro | per_CHO |
|----------------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|--------------|-------------|--------------|--------------|--------------|----------------|
| Type: | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real | Real |
| Source: | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Ent... | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free For... | Free For... | Free For... | Free For... | Free For... | Free Form... | Free Fo... | Free For... | Free Form... | Free For... | Free Form... | Free Form... | Free Form... | Free Format... |
| Dec. Places: | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mean: | 1.86 | 7.01 | 9.73 | 2082.89 | 70.41 | 306.55 | 66.81 | 24.42 | 25.40 | 13.52 | 201.59 | 19.76 | 14 | .59 |
| Std. Deviation: | .21 | 4.05 | 6.69 | 517.77 | 17.28 | 84.07 | 20.83 | 8.75 | 7.44 | 5.53 | 101.17 | 7.87 | .02 | .07 |
| Std. Error: | .05 | 1.43 | 1.73 | 118.79 | 3.96 | 19.29 | 4.78 | 2.06 | 1.75 | 1.30 | 23.85 | 1.86 | .01 | .02 |
| Variance: | .05 | 16.37 | 44.70 | 268089.20 | 298.60 | 7067.95 | 433.78 | 76.60 | 55.31 | 30.54 | 10234.60 | 61.98 | 5.53E-4 | .01 |
| Coeff. of Variation: | .11 | .58 | .69 | .25 | .25 | .27 | .31 | .36 | .29 | .41 | .50 | .40 | .17 | .12 |
| Minimum: | 1.47 | 3.80 | 3.20 | 1097.32 | 27.12 | 164.24 | 32.05 | 12.28 | 11.62 | 4.90 | 53.91 | 7.10 | .10 | .45 |
| Maximum: | 2.21 | 15.10 | 25.20 | 3463.25 | 109.27 | 499.09 | 122.66 | 51.39 | 43.65 | 25.28 | 479.40 | 36.30 | .20 | .74 |
| Range: | .74 | 11.30 | 22.00 | 2365.92 | 82.15 | 334.85 | 90.60 | 39.11 | 32.03 | 20.38 | 425.49 | 29.20 | .10 | .30 |
| Count: | 19 | 8 | 15 | 19 | 19 | 19 | 19 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Missing Cells: | 2 | 13 | 6 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Sum: | 35.32 | 56.10 | 146.00 | 39574.94 | 1337.75 | 5824.50 | 1269.41 | 439.55 | 457.21 | 243.34 | 3628.59 | 355.74 | 2.44 | 10.54 |
| Sum of Squares: | 66.48 | 507.97 | 2046.86 | 8.73E7 | 99562.65 | 1912741.89 | 92618.86 | 12035.94 | 12553.49 | 3808.73 | 905469.78 | 8084.44 | .34 | 6.26 |

| | PAL_2 | Lep_1 | Lep_2 | En_int | Prot_g | CHO_g | Fat_g | Sat_g | Mono_g | Poly_g | Chol_mg | Fiber | Per_Pro | per_CHO |
|----|-------|-------|-------|---------|--------|--------|--------|-------|--------|--------|---------|-------|---------|---------|
| 1 | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2 | 2.07 | • | 7.60 | 2319.31 | 64.65 | 352.16 | 77.72 | 30.28 | 29.04 | 12.57 | 202.23 | 22.04 | .11 | .61 |
| 3 | 2.03 | 5.10 | • | 2121.46 | 65.79 | 332.68 | 63.45 | 25.94 | 22.57 | 10.03 | 298.40 | 21.05 | .12 | .53 |
| 4 | • | 5.30 | 8.70 | 1999.51 | 58.94 | 305.37 | 53.31 | 16.16 | 22.60 | 10.47 | 91.27 | 23.44 | .12 | .61 |
| 5 | 1.86 | • | 5.50 | 1817.84 | 65.90 | 238.15 | 69.41 | 19.25 | 26.10 | 19.33 | 162.65 | 11.45 | .15 | .52 |
| 6 | 1.80 | 3.80 | • | 2594.00 | 69.00 | 412.00 | 82.00 | 26.00 | 33.00 | 17.00 | 170.00 | 28.00 | .11 | .64 |
| 7 | 1.66 | • | 6.30 | 1535.32 | 55.34 | 188.97 | 64.11 | 24.57 | 24.99 | 10.23 | 146.86 | 8.42 | .14 | .49 |
| 8 | 1.71 | • | 6.10 | 1667.50 | 63.70 | 233.01 | 56.31 | 18.48 | 22.82 | 10.39 | 218.68 | 15.15 | .15 | .56 |
| 9 | 1.69 | • | 3.20 | 2202.20 | 77.63 | 356.55 | 60.78 | 17.13 | 24.50 | 14.29 | 101.15 | 36.30 | .14 | .65 |
| 10 | 1.94 | • | 5.80 | 2707.15 | 83.86 | 366.34 | 91.48 | 29.09 | 30.52 | 25.28 | 204.19 | 21.37 | .12 | .54 |
| 11 | 1.96 | 3.80 | • | 2237.26 | 79.47 | 292.47 | 78.29 | 30.69 | 27.73 | 13.98 | 247.86 | 20.86 | .14 | .52 |
| 12 | 1.47 | 15.10 | 11.60 | 2029.00 | 72.00 | 269.00 | 73.00 | 27.00 | 24.00 | 16.00 | 247.00 | 13.00 | .14 | .53 |
| 13 | 1.70 | • | • | 1659.36 | 45.34 | 284.88 | 43.41 | 15.64 | 16.32 | 8.24 | 130.48 | 11.72 | .11 | .69 |
| 14 | 1.99 | • | • | 2140.49 | 77.11 | 397.58 | 32.05 | 12.28 | 11.62 | 5.13 | 53.91 | 32.45 | .14 | .74 |
| 15 | 1.89 | • | 20.30 | 3463.25 | 109.27 | 499.09 | 122.66 | 51.39 | 43.65 | 19.56 | 293.97 | 17.93 | .13 | .58 |
| 16 | 2.21 | • | 20.00 | 1097.32 | 27.12 | 164.24 | 41.70 | 20.85 | 13.01 | 4.90 | 80.75 | 22.01 | .10 | .60 |
| 17 | 2.17 | 8.00 | 6.00 | 1670.69 | 81.60 | 264.35 | 57.86 | 23.40 | 29.19 | 14.82 | 265.61 | 18.46 | .20 | .63 |
| 18 | 1.78 | • | 4.00 | 2006.30 | 76.60 | 317.60 | 52.60 | • | • | • | • | • | • | • |
| 19 | 1.64 | 4.30 | 6.20 | 2528.70 | 88.43 | 351.77 | 89.06 | 30.34 | 31.45 | 21.30 | 234.18 | 25.01 | .14 | .56 |
| 20 | 2.16 | • | 9.50 | • | • | • | • | • | • | • | • | • | • | • |
| 21 | 1.60 | 10.70 | 25.20 | 1778.28 | 75.99 | 198.31 | 60.21 | 21.07 | 24.10 | 9.83 | 479.40 | 7.10 | .17 | .45 |

| | per_Fat | Fat_Sat | Fat_Mon | Fat_Pol | Input Column |
|----------------------|--------------|--------------|--------------|--------------|-------------------|
| Type: | Real | Real | Real | Real | Real |
| Source: | User Entered | User Entered | User Entered | User Entered | User Entered |
| Class: | Continuous | Continuous | Continuous | Continuous | Continuous |
| Format: | Free Form... | Free Form... | Free Form... | Free Form... | Free Format Fixed |
| Dec. Places: | 2 | 2 | 2 | 2 | 3 |
| Mean: | .29 | .36 | .38 | .20 | . |
| Std. Deviation: | .05 | .05 | .04 | .05 | . |
| Std. Error: | .01 | .01 | .01 | .01 | . |
| Variance: | 2.88E-3 | 3.02E-3 | 1.86E-3 | 2.08E-3 | . |
| Coeff. of Variation: | .18 | .15 | .11 | .23 | . |
| Minimum: | .13 | .28 | .31 | .12 | . |
| Maximum: | .38 | .50 | .50 | .28 | . |
| Range: | .24 | .22 | .19 | .16 | . |
| Count: | 18 | 18 | 18 | 18 | . |
| Missing Cells: | 3 | 3 | 3 | 3 | . |
| Sum: | 5.27 | 6.53 | 6.81 | 3.54 | . |
| Sum of Squares: | 1.59 | 2.42 | 2.61 | .73 | . |

| | per_Fat | Fat_Sat | Fat_Mon | Fat_Pol | Input Column |
|----|---------|---------|---------|---------|--------------|
| 1 | • | • | • | • | • |
| 2 | .30 | .39 | .37 | .16 | |
| 3 | .27 | .41 | .36 | .16 | |
| 4 | .24 | .30 | .42 | .20 | |
| 5 | .34 | .28 | .38 | .28 | |
| 6 | .28 | .32 | .40 | .21 | |
| 7 | .38 | .38 | .39 | .16 | |
| 8 | .30 | .33 | .41 | .18 | |
| 9 | .25 | .28 | .40 | .24 | |
| 10 | .30 | .32 | .33 | .28 | |
| 11 | .31 | .39 | .35 | .18 | |
| 12 | .32 | .37 | .33 | .22 | |
| 13 | .24 | .36 | .38 | .19 | |
| 14 | .13 | .38 | .36 | .16 | |
| 15 | .32 | .42 | .36 | .16 | |
| 16 | .34 | .50 | .31 | .12 | |
| 17 | .31 | .40 | .50 | .26 | |
| 18 | • | • | • | • | |
| 19 | .32 | .34 | .35 | .24 | |
| 20 | • | • | • | • | |
| 21 | .30 | .35 | .40 | .16 | |

Final Reports:

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